LUND UNIVERSITY
School of Economics and Management
Master Program in Economic Growth,
Innovation and Spatial Dynamics

Financial liberalization in Thailand: Impact on the Growth and Volatility of foreign investment in stock market and the stock market

Vasana Mahamarn
vasana.mahamarn.121@student.lu.se

Abstract: Financial liberalization has been recognized as a driver of economic growth; since it aims to increase foreign investment in a particular country. Historically, financial liberalization has affected the economic growth, investment, and consumption of a country. Thailand introduced financial liberalization in the late 1980s and has increased this model over time. This study investigates the impact of financial liberalization on foreign investments and stock markets while taking into account the changing nature and volatility of foreign investment in the Thai stock market and the Thai stock market. The paper discusses liberalization during two periods: after the Asian crisis of 1997 and in 2000 during the financial institutions' recovery plan. Thailand has shown an upswing in foreign investment and an enhanced stock market index but higher volatility of the stock market and foreign investment since the country's financial liberalization. However, the volatility of foreign investment and the stock market index still showed no significant change in the country's finances.

EKHR23
Master's thesis (30creditsECTS)
Spring2010
Supervisor: Håkan Lobell

EXAMINER: TOBIAS AXELSSON

Financial Liberalization in Thailand: Its Impact on the Growth and Volatility of the Thai Stock Market and Foreign Investment

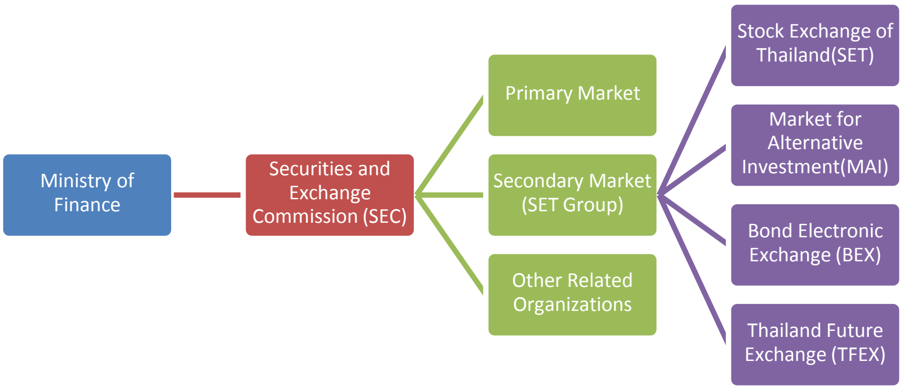
Introduction

In recent times financial liberalization has played a significant role in developing the financial sector and leading the whole economic sector with deregulation and new policies in order to attract investment in a particular country; mainly in foreign investment. The main driver for growth in either financial or economic sectors could be perceived as one of advantages of financial liberalization. Thai financial sector was introduced the financial liberalization in 1980s. Speaking of the capital market, the Stock Exchange of Thailand (SET) - the Thai stock market - has experienced financial liberalization since the 1990s, with the aim of increasing the participation of investors, particularly foreign investors. Remarkably, during the Asian crisis the Thai financial system crashed leading to the International Monetary Fund (IMF) assisting in financial system restructuring. Since that time, Thailand has been influenced and forced by the IMF to change and develop its financial system. This study will focus on the Thai stock market and foreign investment in the stock market in that time period, with the significant changes in financial liberalization in Thailand, to assess its impact in terms of growth and volatility. Before getting into financial liberalization and foreign investment in Thailand, this section will briefly introduce the stock market in Thailand.

The Stock Market of Thailand

First of all, the reformation of the stock market, Thai stock market started in the early 1960s as the Bangkok Stock Exchange (BSE) established from the first five year National Economic and Social Development Plan. The modern stock market in Thailand was initiated to support and promote economic growth and stability, and to provide more trading stock channels for both investors and fund-raisers. As mentioned, the creation of first official sanction and regulation of the Thai stock market were proposed by the second five-year National Economic and Social Development Plan, 1967-1971 (Stock Exchange of Thailand). Practically speaking, the Thai stock market could be divided into two phases; firstly between 1963 and 1970s, and secondly from 1970s to present. Accordingly, the Bangkok Stock Exchange (BSE), the first phase of Thai stock market, was not particularly successful with decreasing annual turnover value, trading volume and turnover value. For example, annual turnover of the Bangkok Stock Exchange (BSE) value was only 160 and 114 million baht in 1968 and 1969 respectively (Stock Exchange of Thailand). Thus, the Bangkok Stock Exchange (BSE) finally ended operations in the early 1970s. The failure of Bangkok Stock Exchange (BSE) could be blamed as the result of a lack of official government support and limited investors' knowledge of the stock market. Because of the failure of the Bangkok Stock Exchange (BSE), the Thai Government became involved in the Thai capital market by producing and improving rules, regulations, and policies in order to develop the market. According to the improvement and development for new Thai stock market, "The Stock Exchange of Thailand" (SET) was established in May 1975 and started trading in April 30th, 1975.This can be considered as the second period of the Thai stock market.

Figure 1: Regulatory Authorities Structure of Stock Exchange of Thailand



According to the regulatory authorities, as shown in Figure 1, the SET Group has been under the supervision of the Securities and Exchange Commission (SEC), and the Stock Market of Thailand (SET) has been operating under the Securities and Exchange Act of 1992 (SEA). The Office of the Securities Exchange Commission (SEC) started operations in May 1992 and mainly give the new agency an adequate level of readiness to operate in a systematic manner. Specifically to financial management, human resources, and supervisory regimes, required from the first day of operation, without disrupting the ongoing developments and other activities already under way. As mentioned in Figure 1, the SET group does not refer only the Stock Exchange of Thailand (SET) but also the Market for Alternative Investment (MAI), the Bond Electronic Exchange (BEX) and Thailand Future Exchange.

The Stock Exchange of Thailand (SET)'s primary roles are to serve as the secondary market for the trading of listed securities, to provide the essential systems needed to facilitate securities trading and any business relating to the stock exchange: such as a clearing house, securities depository center, securities registrar, or similar activities and to undertake any other business approved by the Securities and Exchange Commission (SEC) (Stock Exchange of Thailand). Practically, companies could raise their shares by stock rising which could be done using either private placement or public placement. Private placement is capital trading to a relatively small number of selected investors; by internal employees, former shareholders, for example: while the public placement would be done by offering shares to the public on the open market. The first trading of stock by companies to public investors is called initial public offering (IPOs). Besides the first trading, the secondary market is established for the trading of financial instruments which are not first time trading. There are the number of equity instruments trading in the Stock Exchange of Thailand; Common Stock, Preferred Stock, Warrant, Unit Trust, Non - Voting Depositary Receipt (NVDR) and Depository Receipt (DR). Generally, the Thai stock market has mainly concentrated in common stock followed by preferred stock and warrant respectively, in terms of trading frequency and number of products. For instance, in the end of 2007, there were 582 listed securities of which about 84.4 percent are common stock (491 listed securities), followed by warrant and preferred stock, 12.5 percent and 1.7 percent, respectively.

Over a period of time the Stock Exchange of Thailand (SET) has been developing systems and regulations serving both domestic and international investors. Firstly, the SET's trading system is a thoroughly computerized stock exchange. In 1991 trading was done through the "Automated System for the Stock Exchange of Thailand (ASSET)", and then was upgraded in August 2008 to the new trading system "Advance Resilience Matching System (ARMS)", better in risk management and more efficiency and improved system redundancy. Then, the trading method, there are two methods for trading which are (i) Automatic Order Matching (ATOM) trading which would match the order according to price, then time priority without human intervention, (ii) Put Through (PT) Trading: this method would be done by the brokers advertising their buy or sell interests using bid or offer price announcements. Plus, a remarkable change was the new channel for trading stock in Thai stock market, using internet trading in 2000. Investors in the stock exchange in Thailand would be classified into four groups; local institutions, foreign investors, local investors and proprietary trading. In 2008, local investor's trading has shown the largest group in Thai stock market, followed by foreign investment.

Apparently, the establishment of the Stock Exchange of Thailand (SET) is served as the secondary market for trading stock to public which would be easier to match the money demand and supply, using financial instruments, mainly common stock. The establishment of the Stock Exchange of Thailand (SET) would be one of the main drivers for the financial market growth with the new channel of stock trading that generates a significant higher investment flow. Overtime, the Thai stock market has shown an increasing upward trend with higher total market capitalization in both par value and market value, and higher volume trading of each investor group, for example. Similarly, numbers of listed companies and the number of listed common stock have increased from 305 listed companies and 359 listed common stock in 1992 to 523 and 491 in 2007, respectively. Meanwhile, the number of investors in the stock market has increased, in 2008, the total number of investor account was about 1.79 times of in 1995 and the active investor account was about 1.6 times that of 1995, and the number of investors has dramatically increased in 2003 and 2002 respectively. The increasing of number of investors would be the result of either the growth of market or the increasing of trading channel, internet trading, for example[1]. According to the investment return, the stock market also showed a higher return compared with other investment which the return of capital market is about fourfold of the saving in banks, even the return with inflation deductive, and the capital market still showed about a threefold higher return than banks (Stock Exchange of Thailand). All mentioned above would be one of many reasons of the further growth of the Thai stock market.

In general, the stock market has been driven by both securities demand and supply which would derive from both domestic and international investors. The trading behavior of investors would be influenced by many factors; global economies, domestic economic factors, internal politics, and so forth which would affect the investor's confidence to invest in a particular country. Speaking of Thailand, investor's confidence is one of the main influences for growth of Thai stock market. For instance, the beginning of SEC, 1992, the stock market had showed an actively high degree of short-term speculation with the SET index falling to 660 points during the first week of the SEC's operation but was at 800 points at the end of first quarter and continually increased until its peak at 1,700 points in January 1994. Similarly, the volatility of market value has been influenced by both internal and international factors; for instance, the highest index is 1753.73 in 4 January 1994 which was during the economic boom in Thailand before the Asian crisis. During that crisis the market crashed with a higher foreign investment outflow, closing down of many companies and broker companies. Apart from the Thai stock market, this study would focus on foreign investors affected by financial liberalization, mainly the foreign investment in the Thai stock market, which will be explained below.

The Foreign Investment in Thailand

Overtime, Thailand has been reducing the investment barrier for foreign investor. Historically, foreign investment in Thailand had been significantly seen from 1980s which was the result of changing investable limits of foreigners in Thai companies. Accordingly, private foreign investment has increased and showed the majority investor of foreign investment inflow in Thailand, followed by foreign institutions and foreign governments. Foreign investment in Thailand is regulated by the Foreign Business Act (the FBA) B.E. 2542 (A.D. 1999), which has been in effect since 4th March 2000, Alien Employment Act B.E. 2521 (A.D. 1978) and Investment Promotion Act B.E. 2520 (A.D. 1977) by

1 The data of total number of customer accounts which are trading in both broker and sub-broker as 30th September 2009, Stock Exchange of Thailand

the Thai Ministry of Commerce (the MOC). Thus, the breadth of businesses or activities that are subject to foreign ownership limitations is substantial.

According to Huang and Yang (2000) who studied about the foreign investment in Thailand, foreign investment can be define into two categories, first, long-term investment, also called, direct foreign investment (DFI) and, second, short-money also called portfolio investment (PI). Moreover, they mentioned that Thailand's foreign investment was dominated by short money which is the major foreign investment was in the stock market. The foreign investor in Thailand who plays as the shareholders in Thai companies is considered as "(i) a foreign national has voting control of the company and a predominant economic interest in the dividends and/or distribution of its assets on a dissolution or winding-up, while (ii) the company is considered to have Thai nationality because Thai nationals hold a numerical majority of the total number of shares issued by the company" (Bennett & Savage, 2006). Overtime, the foreign investment would be restricted by the foreign shareholders' or investments' limitation.

In this paper will investigate the foreign investment only in the Thai stock market. In December 1988 it was announced that foreign investors could hold shares up to 49% of the total in a Thai company. Since then, the portfolio investment in the Thai stock market has dramatically increased. Furthermore, this financial liberalization also affected the stock market which showed in the significant growth of SET index after the liberalization, from 386.73 in 1988 to 879.19 in 1989 which was about 227 percent growth. However, foreign investment had decreased during the Asian crisis which was the result of short-term speculation and the uncertainty of the economic situation. Then, in order to get through the difficult time of financial crisis, Thailand has been both directly and indirectly forced to be more open to international influences. The market was more open in late 1997 after the Asian crisis and there was a financial liberalization again since the recovery plans of financial institutions in late 1999. The main goal of these recovery plans was to pursue broad economic liberalization measures to enhance resource mobilization, increase economic productivity, and eliminate operational deficiencies (Ahmed & Islam, 2009). Nevertheless, foreign investment in the Thai stock market would be seen as the investor side only, since foreign companies are not allowed to list in the Thai stock market.

Literally, the foreign investor could invest in the Thai stock market as the individual and institution investors which would be limited by the percent of foreign shareholders' limitation. Stock trading in the SET has been separated into two boards; main board and foreign board. Main board is used for trading common stocks, preferred stock, warrant, unit trusts which would at least 1 board lot trading (I board lot = 100 shares) with spread and price limits. Foreign Board of the SET which was introduced in September 1987 aims to encourage foreign trading in the market. According to the Securities and Exchange Act B.E. 2535, "foreign board" means the board used in the trading of securities whereby the holder of securities according to the securities holder register is an alien (Stock Exchange of Thailand). The limitation of foreign shareholders would show in the foreign board which normally shows a higher price than in the main board.

There are many factors involved in foreign investors decision-making, such as; regulation and rules, interest rates, exchange rates, and economic factors of the country of origin. The foreign investors would shift their money to the place that has more profit and less entry barriers, regulations and cost of trading. For instance, foreign investment would be increased by lowering of regulations of entry to the market, as same as the depreciation of Thai baht against US dollars. Ultimately, foreign investment behaviors in the Thai stock market would mostly aim the capital gain in stock price rather than the controlling of the company. However, there would be the foreign investors who come to the stock market to buy shares because of either controlled rights in the company or advantage from regulation, for example, tax exemption of capital gain. Apart from the foreign ownership limitation foreign investment in the stock market could be done through nominees, in order to either take over the company or return from the dividend or capital gain.

Theoretically, liberalization would be done in terms of either deregulation or new regulations which would attract investment flow, especially foreign investment flow, also called the business friendly environment. So, financial liberalization has been understood as one of decisions to allow foreigners to trade shares easier in a country's stock market and turn back their capital gains. According to many studies, the researchers had defined the following benefits from stock market liberalization: (i) the liberalization could reduce the cost of stock market in the country by increasing the risk sharing between domestic and foreign agents; (ii) capital account liberalization may have a positive impact on investment ((Cajueiro, Gogas, & Tabak, 2009), (Ahmed & Islam, 2009)and (Abiad, Oomes, & Ueda, 2005)). Over time, the government and policy makers had improved the financial sector with deregulations, regulations and new rules. Moreover, the openness of the Thai financial market was more widely opened by IMF agreements after the Asian crisis in 1997, which originated in Thailand. The relaxation of regulations, such as a higher percent of foreign ownership, would affect Thai business, for example, in the banking sector that shown the higher business integration after the crisis that the result of the completely removed the limitation of foreign investment.

In this study will follow the Keynesian's view who believes that of the changing in consumption, investment, or government expenditures causes output change(GDP) as;

GDP (Gross Domestic Product) = C (Consumption) + I (Investment) + G (Government) + X (Export) - M (import)

As the Keynesian's view, financial liberalization would increase the foreign investment which would lead to increasing in economic output in the end. Financial liberalization has been perceived as one of the main drivers in foreign investment growth leading to stock market growth. This study will give an account of how financial liberalization may cause the changing of regulations and institutions and result in changes of foreign investment and stock market growth in the Stock Exchange of Thailand (SET). Thus, questions have been raised about the impact of financial liberalization on stock market and foreign investment in the Thai stock market that financial liberalization has improved the market in terms of growth and volatility. The research question is

"Does financial liberalization effect the growth and volatility of foreign investment and stock market in Thai stock market after the Asian crisis and financial liberalization?"

The aim of this paper is to determine if how growth and volatility are affected after financial liberalization, and does financial liberalization benefit the stock market with regulations and deregulations. The objectives of this research are to determine whether;

(i) *Does financial liberalization increase foreign investment in the Thai stock market and the Thai stock market?* - To prove the Keynesian's view, the study will investigate if financial liberalization benefits the foreign investment and stock market, in terms of the higher growth of foreign investment and stock market after liberalization. The study would firstly investigate the changing of foreign value investment and stock market and then explore the changing of foreign investment and stock market growth after financial liberalization.

(ii) *Does financial liberalization decrease the volatility of stock market and foreign investment?* – Since financial liberalization was implemented it is believe to be one of the main drivers of growth in both stock market and foreign investment in stock market. But the growth of either stock market or foreign investment may occur in the short period, also called speculative investment, which, in the author's point of view, would increase the instability of Thai stock market as well as the financial system. Then the question to be asked is after financial liberalization has taken place in Thailand, if the volatility of stock market and foreign investment in stock market changes. Because the growth this essay critically traces if the volatility of stock market and foreign investment influence by financial liberalization after financial liberalization.

In order to investigate the answers, this study would apply administration data, using the SET data from 1992 to 2008. This study used the trading value data to inquire the research objects; the foreign value trading would answer the impact of financial liberalization on foreign investment, while the SET index, total value trading data of all investor groups would explain the phenomenon of the Thai stock market after financial liberalization.

The study would explore in the different time period, mainly before (1992 – Q3/1997) and after Asian crisis liberalization (Q4/1997 – Q4/2008), and then plus the period after the financial institution's recovery plan in August 1999 (Q1/2000 – Q4/2008), in order to avoid the crisis bias. The examination of the value trading and SET index data in different period would provide the impact of liberalization on growth and volatility of foreign investment and stock market. In order to explore the impact of financial liberalization on foreign investment, the paper would acquire growth and changing calculation of investment in each investor groups. Then, the standard deviation and coefficient of variation method will be used to investigate volatility of foreign investment in each period of time.

While a variety of definitions of financial liberalization have been suggested, this paper will use the definition first suggested by Kaminsky and Schmukler's study (2001) who saw it as three categories; domestic financial liberalization, capital account and stock market liberalization and in some cases the stock market liberalization also be explained as the capital account. Thus, in this study would focus in all financial liberalization since it is related to each other. For example, the increasing in interest rate (domestic financial liberalization) would shift foreign investment from the stock market to the money market, and vice versa. Moreover, there would be the assumptions of this study which are that (i) there is no exact data of financial liberalization; (ii) the changing of both foreign investment flow in the Thai stock market and stock market index would be assumed as the result of financial liberalization only. Furthermore, this study would be limited by the shortage of data that provide only the quarterly data from 1992 to 2008.

This paper has been organized in the following way. It first gives a brief overview of recent research of financial liberalization and its impact on the growth and volatility of stock market and foreign investment in other countries. It will then go on to narrative term which gives a brief overview of financial liberalization in Thailand particularly since the 1990s and theoretical dimensions of the research. Section 3 begins by laying out the data being used in this study, and looks at how to investigate the research questions. Section 4 describes the result of the study. The last chapter assessed the conclusion and discussion for further research.

Literature Review

There is a large volume of published studies describing the role of financial liberalization in financial markets which was perceived as one of the mechanisms to increase investment in a country, focus in foreign investment, through the relaxation of regulation and policy. This study would analysis the impact of financial liberalization on the growth and volatility of stock markets and foreign investment. Numerous studies have attempted to explain financial liberalization that can lead to higher growth of stock markets and then economic growth, because of the increase in foreign investment flow in the country leading to economic output growth in the end (Ahmed & Islam, 2009; Ariff & Khalid, 2005; Cajueiro, Gogas, & Tabak, 2009 and Henry P. B., 1999). Financial liberalization would increase economic output because of the increasing of direct foreign investment in a particular country. Furthermore, several researchers also claimed that stock market liberalization would reduce the volatility of stock markets since the flexibility of investment flow that is the result of regulation relaxation (Huang & Yang, 2000; Horng & Hsu, 2007). So far, however, there has been little discussion about the problems of financial liberalization can result in the incomplete competition in financial markets and lead to financial crisis in the end.

Thus, this section would attempt to explain financial liberalization which this first gives the definition of financial liberalization that is classified in several categories. Before the data and methodology in the next chapter, this section will explain about financial liberalization and its major role that affect the growth and volatility of stock market and foreign investment in stock market which has been studied overtime.

Financial Liberalization

Before getting through the impact of financial liberalization, this section first describes the definition of financial liberalization and then the implementation process of financial liberalization.

According to Kaminsky and Schmukler's study (2001), financial liberalization would be categorized into three main categories. There are domestic financial liberalization, capital account and stock market.

> *"Domestic financial market liberalization the process of designing a regulatory framework for markets that determine who gets and grants credit and at what prices—has swept the world as part of the spread of neo-liberalism over the past three decades" (Way, 2005).*

In their analysis of financial liberalization, first, domestic financial liberalization includes interest rate liberalization (deposit interest rates, lending interest rate), credit controls (allocation of credit, and elimination of credit control), and development indirect instrument of monetary control. In general domestic financial liberalization would be created for increasing and improving the financial institution's operation, in term of interest rate control, credit control and so forth. Second, capital account would be accounted for long term money flow (more than one year money flow), such as, offshore borrowing by domestic financial institutions, offshore borrowing by nonfinancial corporations, multiple exchange rate markets, and controls on capital outflows. The capital account is implemented to improve and increase the participation of long term money flow, both inflow and outflow. Third, stock market liberalization would be tracked by changing in the regulations on three variables; acquisition of shares in the domestic stock market by foreigners(capital inflows), repatriation of capital (capital outflow) and repatriation of interest of dividends(capital outflow).The stock market liberalization would be set to increasing the participation of foreign investors in a country's stock market. In addition, some studies say that stock market liberalization would be included in capital account. The stock market liberalization would be accounted as one part of financial liberalization in order to open the market to foreign investors to trading stock in a particular country's stock market. Throughout this paper the term 'financial liberalization' will be used to refer to all three categories of financial liberalization because the stock market and foreign investment would not only be influenced from stock market liberalization but also domestic liberalization, and capital account.

As the increasing of financial liberalization, there would be several factors that encourage and influence a particular country implementing financial liberalization. The causes of financial liberalization would be described in two ways;

1. <u>The economic constraint or further development in country;</u> Financial liberalization could be seen as the process that country moves away from a state of financial constraint, or financial repression with either policies or the relaxations of regulation, that believe as major contributing factors for the increase of investment, mainly foreign investment in a particular country, and leading to higher economic output in the end. There are several causes of liberalization in a particular country, as mentioned, the financial constraint or financial repression which would be the result of failure in economic issues; such as inability in raise taxes either due to administrative inefficiencies or political constraints. On the other hand, financial liberalization would also be implemented because of further development issues, for instance, government manipulates the financial system to promote its development goals. Financial liberalization also aims to increase the financial status of a particular country. The successive experience in many countries that implemented the liberalization, in

term of economic growth and output, would be one reason of financial liberalization and would be categorized as the international factor. Plus, the higher competition in global markets would influence the country to open their market by liberalizing their financial market. In other words, financial liberalization is implemented mainly to reform the financial sector in order for the financial sector to play a greater role, particularly in national savings, growth and efficiency of capital allocation (Ahmed & Islam, 2009). Generally speaking, financial liberalization would be implemented from either the economic constraint or the greater development and improvement of the financial sector in a particular country, the intention is to upgrade the financial status for both country and people.

2. <u>International or domestic factors:</u> The increasing of financial liberalization could also be seen as the consequence of either "top-down" mechanisms, also called international factors or "bottom-up" mechanisms, called domestic factors, or both of them that influence the country to reform their financial market. Top-Down mechanisms (international factors) could be implied the increasing of competition in global aspects, the pressure at international level, also called globalization, which country should adapt to the new challenge. Then, Bottom-Up mechanisms (the domestic factor) would refer not only to the economic constraint in the country but also to the reformation of domestic financial markets to improve the living standard of people in the country. Accordingly, financial repression would also be named as one of the drivers of financial liberalization in global and local aspects, that country would find a way to avoid or eliminate financial repression. Increasing of financial liberalization can therefore be assumed that is the result of either domestic factors or international factors that drive the particular country to change their financial process in order to be ready for changing to new competition or the global economy.

Speaking of the implemented method, financial liberalization could be implemented through several methods, for instance, the relaxation of regulation, credit control, interest rate controls and, entry barriers deregulation, privatization of state ownership in the financial sector, new instruments of monetary policy and relaxation of restrictions on international financial transactions and foreign exchanges. As the authorities, financial liberalization could be implemented by either the decisions of government or policy makers in a particular country. Generally speaking, the process of financial liberalization mostly starts from the domestic level through deregulation/removal of controls over deposit and lending rates, reducing reserve requirements, reducing entry barriers to the financial services industry, pursing a program to stabilize price levels and generally decrease the state's involvement in the activity of financial intermediaries, and then followed by trade liberalization before shifting to external capital account liberalization and changes in the institutional framework of fiscal and monetary policies (Ahmed & Islam, 2009). Furthermore, sometimes external liberalizations concern relaxation of domestic restrictions, such as buying from abroad and in a broader view, are concerned as the foreign currency trading, also called the capital account.

Financial liberalization has been identified as a major contributing factor for growth. There are three categories of financial liberalization; domestic financial liberalization, capital account and stock market liberalization. The causes of financial liberalization has been widely investigated and can be explained in two ways; first, financial liberalization is the result from either economic constraint or further development; second, financial liberalization is the result from either a domestic aspect; crisis in country, aim to upgrade standards of living and a country's financial status, and international aspects; the aim to increase the competitive advantage in a global economy

The Impact on the Growth and Volatility of Stock Markets and Foreign Investment

Recently, the openness of financial markets has been a concern of many countries since globalization and more competition in the global economy leading to a 'shrinking world' and an increased mobility. Historically, there are an increasing number of financial liberalizations in many countries. For instance, China's securities market had more relaxation to foreign brokerage firms and foreign investors in 2008. Limitation of foreign brokerage is 20% and 25% of total foreign ownership (Clouse, 2008). Once financial liberalization is implemented, it can lead to higher integrated markets in many countries as well as regions. European countries, for example, which have been integrated in terms of the economic union for more competitive advantages in the world market and so forth. In recent years, there has been an increasing amount of literature on financial liberalization, especially its impact on the growth and volatility of stock markets and foreign investment which the author will describe below.

Market growth

Financial liberalization would increase the economic output and financial market growth in a particular country. History shows the success of financial liberalization with higher growth rates in either economic growth or stock market growth. Keynesian theories demonstrate that total output is derived from total spending on consumption (C), investment (I), government expenditure (G), and net export (X-M). This lead to this equation:

> *"GDP (gross domestic product) = C (consumption) +I (investment) + G (government expenditure) + X (Export)-M (import)"*

As the Keynesian's view, financial liberalization may increase the total market growth with higher relaxation of the market increasing investment - mainly foreign investment - government expenditure, consumer expenditure and exports. In general, financial liberalization would mainly aim to increase investment, and once investment has increased consumption would increase (due to higher wages and cash flow in the economic system). Similarly, exports and imports would be higher since the relaxation and cancellation of trading and capital control. All of these may lead to increasing of gross domestic output and in to a lesser aspect, the financial market growth. In additional, several theorists of financial liberalization say that financial liberalization would increase saving and investment in countries in terms of higher growth. Therefore, financial market liberalization would lead to a positive impact on both macroeconomic and stock markets, for instance, GDP growth, higher employment and stock market growth.

According to Keynesian theory financial liberalization would increase economic output via increasing investment, consumption and national savings. As the overall financial liberalization, many countries have shown rapid extension of consumer credit after liberalization, for instance, Way (2005) suggests in his study that in the 1980s the United Kingdom and Sweden financial liberalization led to consumption booms with more available credit. Moreover, in his study, he argues: *"consumption booms are of even greater potential importance in developing countries…"* . According to Siamwalla's study (2000), in Asian countries, such as; Thailand, Indonesia, Malaysia and South Korea experienced high economic growth after financial liberalization as a result of increased capital inflows (through global relocation of capital), exports diversification and foreign investments (Ahmed & Islam, 2009).

Speaking of stock market aspects, financial liberalization is also believed to be one of the main drivers of stock market growth, because the lower barrier of investment in stock market may lead to higher investment and subsequent market growth. For instance, according to International Finance Corporation (IFC) data issued in 1993, market capitalization of developed countries rose relative to GDP between 1983 and 1992 from 2% to 10% of the global total after they liberalized their stock markets (Singh, 1997). And, for the evidence of 18 developing countries between 1981 and 2000 have shown that stock market liberalizations have a significant impact on the real growth rate of economic indicators, such as: real wages, growth rate of employees, and growth rate of number of new company (Tong, 2005). Henry (1999)studies the two significant empirical implications of liberalization in 12 emerging countries in the late 1980s and early 1990s and points out that the first stock market liberalization would increase physical investment following stock investment. Plus, he also suggests that stock market liberalization can reduce the aggregate cost of equity capital and increase the country's equity price index. As he cites the Bekaert and Harvey (1995)'s study:

> *"Once liberalization takes place and the emerging country's stock market becomes fully integrated, its equity premium will be proportional to the covariance of the*

country's aggregate cash flows with those of a world portfolio. If, in spite of foreign ownership restrictions, the emerging market is not completely segmented" (Henry P. B., 1999)

In other words, financial liberalization, especially stock market liberalization, once it was implemented may increase foreign investment and then can lead to higher growth in stock markets followed by physical investment in a particular country, because of the lower cost of equity that means the higher of expected return on investment. This view is supported by Edwards, Biscarri, & Gracia, (2003) who writes financial liberalization in stock markets and concludes that stock markets increased significantly overtime, especially in Latin American countries (Edwards, Biscarri, & Gracia, 2003). Hence, it could conceivably be hypothesized that financial liberalization possibly increases the total economic growth and possibly increases the total stock market growth with higher consumption, investment and saving.

Higher Foreign Investment

Secondly, financial liberalization can be claimed as one of the drivers for increasing investment owing to the lower cost of equity. As mentioned in the Keynesian's view, financial liberalization would increase investment, especially foreign investment since the lower barrier to entry in a particular country. Generally speaking, the more openness of markets with deregulations, regulations and policies can generate a lower cost of investment also called cost of equity which can result in foreign investors moving their money to a particular country. The evidence showed that in the 11 sample developing countries that implemented stock market liberalization, most of them showed high growth rate of foreign investment after liberalization in the first year, and rest of them showed high growth rate in the few years later (Henry P. B., 2000). Cajueiro, Gogas and Tabak's study (2009) demonstrates that the implementing of financial liberalization in the Greek stock market increased foreign investment in the Greek stock market and the growth of internet participation can add to this. As mentioned, financial liberalization can lead to lower barriers to foreign investment in a particular country with reducing, eliminating regulation and policy and then the lower cost of capital. Apparently, financial liberalization may result in lower cost of investment, lower the market entry barrier which all of these possibly increase foreign investment in a particular country.

According to other studies, financial liberalization could possibly be a major factor, if not the only one, causing higher stock market growth and foreign investment in stock markets.

Volatility of Stock Markets and Foreign Investment

The volatility of stock markets and foreign investment in stock market could be one of the issues after liberalization. Because of the lower barrier for foreign investors, foreign investment can lead to more flexibility in a particular country. Kassimatis (2002) studies the volatility of stock markets between a pre-liberalization period and a post liberalization period in six countries: Argentina, India, Pakistan, Philippines, South Korea and Taiwan. His study highlights that stock market's respond to good news and bad news differently and the volatility of most sample countries' stock markets showed lower volatility after the liberalization was implemented. Plus, Horng and Hsu (2007) also demonstrates the volatility process in the Taiwan stock market and describes that the investment turnover and the exchange rate volatility rate have an effect on the Taiwan weighted stock price return rate volatility. Moreover, the emerging Asian countries: India, Korea, Malaysia, Philippines and Thailand became fully integrated since liberalization was implemented. Liberalization reduced the cost of equity capital and price volatility for most of the markets and has a positive impact in domestic stock market (Tai, 2007). According to the studies, it is possible to hypothesis that there could be lower volatility in stock market once the country liberalized financial liberalization. So far, however, there has been little discussion about the volatility of foreign investment in stock markets after financial liberalization.

However, questions have been raised about the disadvantages of financial liberalization. Ahmed and Islam (2009) who suggested in their study that financial liberalization may increase the instability and vulnerability of economies where financial liberalization can lead to higher risk-taking activities. For instance, the higher bank interest rate ceilings and lowering of entry barriers to financial markets would make the higher market penetration of foreign banks and significant lower monopoly power, thus, financial institutions are probably willing to finance riskier projects for a higher projected return. Moreover, they also mentioned information asymmetries which can make lower efficiencies in allocation, and financial liberalization can make some banking process more difficult than in the pre-liberalization period, such as, assessing and pricing risk. For example, the evidence from Kenya, Malawi and Botswana showed a decrease in savings after liberalization (1996–2000) relative to the pre-liberalization period (1986–1990). At the liberalization stage, many policies were changed to place a greater emphasis on efforts to improve the standard of living, lifestyle and the environment, concentrating on the individual as the direct target (Kishi, 1996). But, the living standard of people would not be resolved by only the interest rate deregulation and privatization, as showed in Japan, Korea and Taiwan case studies (Kishi, 1996) that these countries have been forced to turn their attention to the collapse of their bubble economics. Moreover, Keynesian's view explained that it is doubtful whether liberalization will have a positive impact on saving and investment.

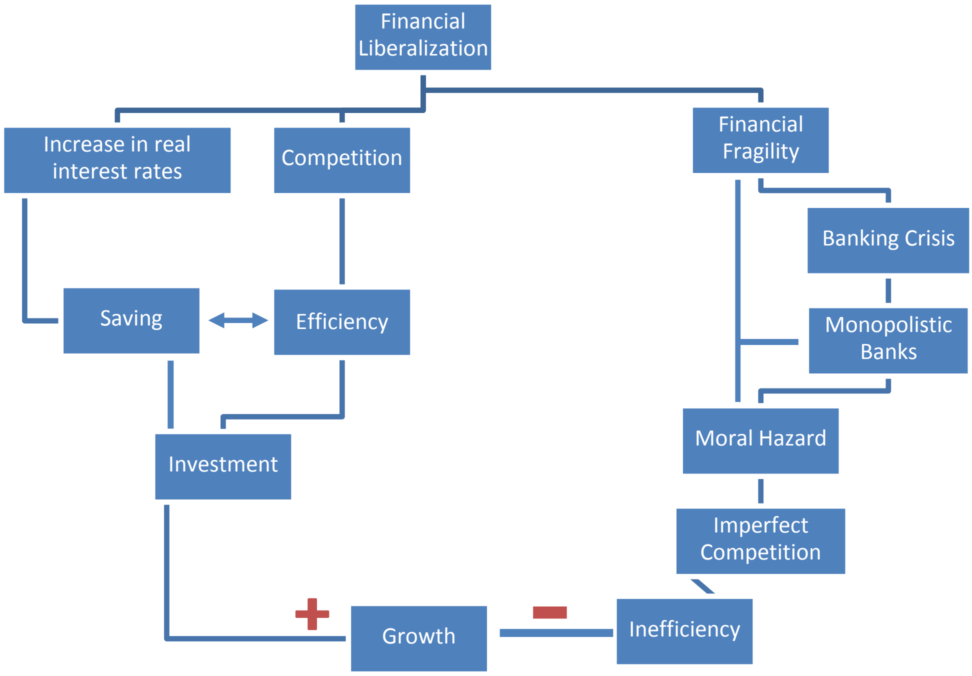


Figure 2:The Chart between financial liberalization and economic growth

Sources; (Ahmed & Islam, 2009)

Figure 2 describes the impact of financial liberalization, reported by Ahmed and Islam (2009) who explained the positive and negative impact of financial liberalization on economic growth. Moreover, there would be some argument about the impact of financial liberalization on the growth of smaller levels, company level, for instance. As the company level, liberalization has been concern as the benefit in company level, in terms of investment flow. Chen, Chou & Chou (2009) studied the impact of financial liberalization at company level from 14 emerging markets during the 1980s and 1990s, which explained that stock market liberalization may generate investment opportunities more in high-growth firms than in low-growth firms, but for the free cash flow would be more favorable for low-cash-flow firms than for more-cash-flow organizations. Moreover, Abiad, Oomes and Ueda (2005) explained about the impact of financial liberalization at company level that it may reduce the variation in expected return in five emerging markets: India, Jordan, Korea, Malaysia, and Thailand. Thus, financial liberalization would benefit for growth companies in term of investment opportunities but would benefit low-growth corporations with free cash flow, plus it would make the expected return more stable.

To sum it up, financial liberalization is categorized in three dimensions; the domestic financial liberalization, the capital account, and the stock market liberalization. In over all, financial liberalization was implemented to encourage economic in a particular country in order to either avoid an economic crisis or improve its competitiveness in the global market. Financial liberalization would be the result of either domestic or international factors. The process of financial liberalization mostly starts from the domestic level, followed by trade liberalization, external trade liberalization and so forth. Literally, financial liberalization, especially stock market liberalization, mainly aims to increase and encourage investors, mainly foreign investors, to shift their money to a particular country with new regulations and policies. Thus, the deregulations, regulations and policies may increase the investment in a particular country owing to the easier to invest and reducing of barrier in the market. Consequently, financial liberalization can reduce the cost of equity capital, leading to the higher rate of (expected) return on investment and then the higher investment. According to Kynesian's view, once the investment increases, the total output will increase. In general, therefore, it seems that financial liberalization would see an increase in both a stock market size and foreign investment in that stock market. After that, the volatility of stock market and foreign investment in stock market are questioned after financial liberalization in a country. As mentioned, financial liberalization may reduce the volatility of a stock market but the volatility of foreign investment in stock markets is not widely studied. Furthermore, financial liberalization would increase the liquidity of market and the changing of corporate structures. The changing of structures in company would also lead to operating, corporate governance and so forth. The research objects are to determine the growth and volatility of foreign investment and stock markets after liberalization. As mentioned in the literature review, financial liberalization likely increases foreign investment, and stock market growth, at same time reduces volatility of a stock market. However, there would be some argument about financial liberalization. Since, financial liberalization would also be argued that it could create a financial crisis since financial liberalization increases financial vulnerability. Financial liberalization can create an incomplete financial market and lead to financial crisis.

Financial Liberalization in Thailand

Thailand introduced financial liberalization in the late 1990s. Overtime, Thai financial sector has developed the financial liberalization.

Remarkably, the beginning phrase of Thai financial liberalization, tn 1990 Thailand accepted article VIII of the article of agreement by the IMF, with the relaxation of restrictions on payments and transfers of current account transactions. Then, this lifted foreign exchange controls on current account transactions, and was perceived as the starting point of financial liberalization in Thailand. In 1992, the Securities Exchange Commission had been introduced in order to control and supervise the stock market of Thailand. After that, the Bangkok International Banking Facilities (BIBF) was found in 1993 in order to provide an offshore financial market because the Thai government aimed to make Bangkok the financial hub in the region. In late 1997, Thailand faced financial problems; foreign debt, collapse of the baht, investment behavior, and so forth. This became known as the 'Asian Crisis'. Alba, Hernandez and Klingebiel (2000)identified that in Thailand liberalization of both financial markets and the capital account of the balance payments, starting with weak initial conditions, and not accompanied by a strengthening of the institutional and regulatory framework, led to a rapid build-up of fragility in both the financial and corporate sectors. The mismatch between the increasing of financial liberalization, the reducing of foreign barriers and the fixing of Thai Baht to U.S. dollar can be claimed as one of main drivers in the Asian crisis. After the booming of the Thai economy, Thailand faced an economic crisis, and assistance from the IMF was needed. Thus, the economic reformation of Thailand in 1997 would be the result of overwhelming economic constraint. According to IMF's assistance, Thailand has been forced more market opennesstoforeign investors and global markets since they believed that higher market openness, the higher economic growth.

In order to examine the impact of financial liberalization on the growth and volatility of stock markets and foreign investment in stock markets after the Asian crisis, this section offers a brief overview of financial liberalization in Thailand. Firstly, this section looks at the situation before the Asian crisis period, between late 1980s and 1997, and the effect of financial liberalization on the Thai economy in that period. Then, this paper will focus on financial liberalization during the Asian crisis which Thailand instigated under the influence of the IMF to liberalize the financial sector in order to get through financial constraints in the country. Finally, the author writes about the possible consequences of liberalization such as the impact on foreign investment, mainly in the stock market liberalization and capital account, since it is not only stock market regulation that affects foreign investment.

Before The Asian Crisis

As mentioned, the Thai financial system has been liberalized since the 1980s and remarkably liberalized in 1990 with IMF Article VIII agreement and 1997; the Asian crisis liberalization. This section explains liberalization in the Thai financial system before the Asian crisis.

Structure of Financial Institution In 1987, the existing financial system in Thailand was formed of commercial banks, finance companies, credit foncier companies, government saving banks, private and government insurance companies, and specialized financial institutions. In 1987 commercial banks were the main players in the Thai financial system. They had 80.9 percent of deposits and accounted for 73.1 percent of total financial system assets, while finance securities companies accounted for 9.5 percent of total system deposits and 12.7 percent of total financial system assets and specialized government banks accounted for 9.5 percent of total financial system deposits and 14.2 percent of total financial system assets (Alba, Hernandez, & Klingebiel, 2000). Historically, commercial banks, the main player at that time, were concentrated in domestic commercial banks rather than foreign banks, with almost 95 percent of commercial banking assets. This was due to the restriction on foreign banks that limited their operation and competitiveness against domestic banks. Plus, there was the oligopolistic structure in the banking sector that few banks played the influence market, in terms of the interbank loan market, foreign exchange transactions. Moreover, commercial banks were not allowed to engage in any securities activities including brokerage of bonds and equities. As mentioned, finance companies which would be accounted as the second largest sector in the Thai financial system. In 1987 about half of finance companies were affiliated with private Thai commercial banks and the government owned Krung Thai Bank in order to provide a larger range of services since the banks were not allowed to carry out these activities. Similarly, the regulation of commercial banks and financial institutions has changed overtime. The financial institution's business has been expanded as showed in Table 1. The Thai financial sector has shown a relaxation of portfolio restrictions and expanded the activities' scope of financial institutions and commercial banks. First of all, commercial banks' portfolio composition was expanded. Then, in 1991, financial companies was allowed to provide a leasing business, followed by permission to service as the selling agents for government bonds to provide economic, financial, and investment information services, and to advise companies seeking listing on the SET in 1992 (Alba, Hernandez, & Klingebiel, 2000). Commercial banks services were expanded to assurance, underwriting and debt securities, to supervise and sell mutual funds, and securities registrars. Furthermore, reserve requirements were concerned as liquid asset requirement which would be allowed to invest up to three percent in government bond.

Money Market In May 1985 there was the establishment of the Bangkok Interbank Offer Rate (BIBOR), but it was restricted only to authorized banks and finance companies. Plus, the tax of interest on bond was cancelled by 1986 and government bonds could be used by banks as collateral in borrowing from the Bank of Thailand. As a result of financial liberalization and internationalization of the financial markets, the money market is closely linked to the foreign exchange market (Ariff & Khalid, 2005).

Interest Rate Control Interest rate ceilings were gradually eliminated since the promoting of international saving inflow by and more globalization in the financial sector. There was the cancellation of interest rate ceiling of long-term time deposits, short-term time deposits and on loan rates in June 1989, March 1990, January 1992 and June 1992, respectively (Petprasert, 2000). Moreover, there also showed more relaxation of commercial bank regulations in 1992 to 1993 with lower requirement of government bond holding in order to open the new branches. Similarly, the credit extensions to rural borrowers were also eased in a wider range of customers, for example, occupations and geographical areas. And, there are well known "liquid reserves" to any financial instruments.

Table 1 shows the domestic financial liberalization- interest rate control, money market, and structure of financial institution- before July 1997, the Asian crisis, and found that there was a lot of liberalization liberalized in that period. However, it would be a noteworthy to point out that Thailand opened its market to foreign investors but still fixed the currency exchange which would become one of the reasons for financial crisis in late 1997.

Table 1: Domestic financial Liberalization and financial structure before 1997, the Asian Crisis

1984	Minimum margin loan requirement 25% for finance companies
1985	Financial Institution Development Fund established, helping the financial institution in times of tight liquidity Introduced Bangkok Interbank Offered Rate (BIBOR) as a reference for the pricing of floating rate loans
1987	- The cancellation of separate interest rate ceiling for lending to priority sectors - Commercial banks and finance companies were allowed to service broadened business including custodial service, loan syndication, advisory services (merger and acquisition), and feasibility studies.
1989	Interest rate ceiling on time deposits of commercial banks with maturity > 1 year were cancelled.
1990	- Interest rate ceiling on time deposits of commercial banks with maturity < 1 year were cancelled. - Minimum denomination of promissory notes' requirement was cancelled.
1991	- Redefine the definition of 'target rural credits' including credit for crop wholesaling and industrial estates in rural areas - The increasing of minimum asset requirement for foreign banks from 5 million to 125 million baht - The trading system, the "Automated System for the Stock Exchange of Thailand"(ASSET), started operation
Jan-91	The cancellation of interest rate ceiling on savings deposits at commercial banks
Jun-91	Interest rate ceiling on finance companies' and credit foncier companies' borrowing, deposits and lending were cancelled, as same as Interest rate ceiling on commercial bank lending
1992	- Financial institutions were allowed to provide the certificates of deposits service

	- Requirement for commercial banks, holding government bonds, was relaxed to 7% of total deposit - Minimum paid-up capital for finance companies increased from 60 million baht to 100 million baht by July 1993 and 150 million baht by July 1994. - Minimum paid-up capital for credit foncier companies increased from 30 million baht to 50 million baht by July 1993, 75 million baht by July 1994, and 100 million baht by July 1995. - Commercial banks and financial companies were allowed to issue NCD.
Jan-92	More relaxation in rural credit requirement
Mar-92	Commercial banks, finance companies and securities companies were allowed to service as selling agent for debt instruments and information service, consulting service(for only commercial banks) and sponsor services (for finance companies and securities companies only).
Jun-92	Allowing commercial banks to operate: arranging, underwriting and dealing in debt instruments; secured debenture holder representative; trustee of mutual funds; securities registrar; and selling agents for investment units.
1993	- BIS standard for commercial banks, commercial banks were allowed to maintain 7% of capital to risk asset ratio; foreign bank branches were required to maintain 6% of tier 1 capital to risk asset ratio. - Authorized commercial banks were allowed to operate international banking business as BIBF or IBF - Commercial Banks capital to risk asset ratio increased to no less than 7.5%, with the first-tier capital fund to risk asset rate to no less than 5%, by 1 April 1994 (8% and 5.5%, respectively, by 1 January 1995) and foreign bank branch's capital fund to risk asset ratio increased to no le.ss than 6.5% by 1 April 1994 and 6.75% by 1 January 1995 - Adoption of BIS standard for Finance companies that required to maintain 7% of capital-risk asset ratio (5% first tier capital–risk asset ratio), effective 1 July 1995
Oct-93	Minimum Retail Rate (MRR) was required to announce.
Sep-94	Allowing commercial banks to invest in any business, not more than 10 percent of total shares sold.
1995	Allowed to provide bill of exchange or certificates of deposits denominated service in foreign currencies to foreign investors or commercial banks authorized to undertake foreign transactions.
1996	- FCs and FRCSs required maintaining liquidity reserves at the BOT at 7% of non-resident baht borrowing or deposit with maturity of less than one year, including the issuance of P/N, B/E, or NCDs. - Financial Institutions Development Fund Bonds issued. - Capital to risk asset ratio increased to 8.5% for commercial banks and 8% to financial companies. - Foreign bank branches allowed to hold debenture, bond or debt instrument as liquid asset

Sources; Alba, Hernandez, & Klingebiel, 2000; Ariff & Khalid, 2005 and Bank of Thailand, 2006

In 1985 capital accounts were relatively open in Thailand as well as current accounts since the regulation of foreign direct and portfolio investment but the investment would be limited by exchange control. Thai people could borrow from outside but subject to registration at the BOT. Current and capital accounts have been remarkably liberalized since 1985. This section below will describe the capital account, including exchange control, foreign investment, foreign exchange systems, and stock market liberalization, and show the liberalization of capital accounts before the Asian crisis, sorting by date in Table2.

The Exchange Control In 1988 the Bank of Thailand authorized liberalization on capital outflow about foreign exchange deposit for transit passengers and credit card processing adjustments and followed by the foreign-borrowing settlements, stock transactions and foreign investment in July 1989. By the end of 1994, Thailand was free of foreign exchange control restrictions on current account transactions, and had a very open and favorable regime for foreign investment (Alba, Hernandez, & Klingebiel, 2000). Alba, Hernandez, & Klingebiel (2000) also mentioned the liberalization process before the Asian crisis that the first official current account transaction had been concerned in IMF article VIII obligations, May 1990. The article VIII included the avoidance of restriction on current payments (current international transactions), avoidance of discriminatory currency practices, convertibility of foreign-held balances, and required to provide information and consultation between members regarding existing international agreements, and the obligation to collaborate regarding policies on reserve assets. Thus, this lifted foreign exchange control on current account transactions, followed by the exchange control front in April 1991 and more openness to outward direct investment, travel expenditures, and additional channels of cross border payment in February 1994 (Petprasert, 2000).

In 1993, the Bangkok International Banking Facility (BIBF) was established for the offshore financial market, taking deposits or borrowing in foreign currencies from aboard, lending in foreign currencies in Thailand and aboard, foreign exchange transactions, trade-related financial transactions and loan agreements through foreign sources and fund managers. The BIBF would facilitate investors in terms of tax and regulatory advantage since Thailand aimed to develop Bangkok as a regional financial hub. The minimum credit level was extended through BIBF from 500,000 U.S. dollars to 2 million dollars and the cash reserve requirement for nonresident accounts and short term foreign borrowing was raised from two to seven percent in 1996

Foreign Direct Investment Thailand has encouraged foreign direct investment, using the relaxation of foreign owned business. For instance, a corporation which is 100% foreign owned was allowed to operate in the export-related sector from 1980. The investment promotion act was established in 1991 in order to promote foreign investment companies which export all their output was allowed to have 100 percent foreign ownership. Plus, Thai investors, who directly invest outside, had been gradually liberalized during 1991 and 1994.

Foreign Exchange System In November 1984, Thailand changed from a fixed exchange rate with linked U.S. Dollar to the weight basket of currencies; U.S. Dollar, Japanese Yen, West German Mark, UK Sterling, Malaysian Ringgit, Hong Kong Dollar and Singapore Dollar. Then in 1990 the basket of currencies was increased by three more currencies; Brunei Dollars, Indonesian Rupiah, and Philippine Pesos. In 1991, Thailand allowed not only authorized banks but also authorized companies and authorized persons to participate in foreign exchange operations. The risk control assessment has been wider spread in this area, since the banks were required to submit risk assessment information to the Bank of Thailand in order to better supervise the banking system. As mentioned before about article VIII, Thailand was more relaxed in outward investment, travel expenditures, and additional channels of cross border payment in 1994. In July 1997, there was a big change in the Thai exchange rate system it changed to a managed floating basis which would change the supply and demand basis in the foreign exchange market. The Bank of Thailand could interfere in the market only when necessary, in order to prevent excessive volatilities and achieve economic policy targets (International Economics, 2000). This basis would rather make flexibility and efficiency in monetary policy implementation and also the confidence of domestic and international investors.

Stock Market liberalization Stock market liberalization would be tracked by changing the regulations on three variables; acquisition of shares in the domestic stock market by foreigners(capital inflows), repatriation of capital (capital outflow) and repatriation of interest of dividends(capital outflow). Although there still were some barriers for foreign investors with foreign ownership regulation, especially companies listed on the SET -Stock Exchange of Thailand and on real estate. In the same way, Thai nationals who invested outside using financial intermediaries and commercial banks were restricted. During 1986, tax in portfolio inflow was reduced, mainly for encouraging Thai mutual funds, followed by the dividend tax, royalty payment, capital gains and interest payment on foreign debentures were improved during 1991 and 1992. In 1990, three mutual funds were created to attract foreign investment, and in 1991 repatriation of investment funds, an interest and loan repayment by foreign investors was fully liberalized (Alba, Hernandez, & Klingebiel, 2000). According to the IMF restructuring plan, the Thai capital market removed its regulation and restrictions by the 1990s. For example, in 1987 a foreign board was set up for foreign investors, the ASSET system- trading system- was introduced in 1993. In addition, there also were several regulations and services for financial institutions, for instance, the Securities and Exchange Act in 1992 and Thai Rating and Information Services (TRIS) in 1993, a Bond Dealers' Club (BDC) in 1994, an over-the-counter (OTC) market in 1995.

Table 2:Liberalization of Capital Account before Asian Crisis

4-Jan-80	The basket of Thai Baht was changed to include the U.S. dollar, Japanese yen, West German mark, UK pound sterling, Malaysian ringgit, Hong Kong dollar and Singapore dollar
1984	- Thai baht is pegged to basket of currencies - Amendment to the Securities Exchange of Thailand Act 1974
3-Dec-87	A "managed float" was being used as the currency control
1989	Relaxation of foreign exchange controls allowing the transfer of capital for dividend, interest and principal payment for foreign loans
1990	- All current account transactions were liberalized and restrictions on capital movement reduction - The basket of currencies was increased from 7 currencies into 10 currencies, including Brunei Dollars, Indonesian Rupiah and Philippine Pesos
4-May-90	Thailand accepted the Article VIII, Section 2, 3 and 4 of the Fund Agreement with IMF with the relaxation of foreign exchange transaction, trade and controls on profit and dividend remittance
1991	- Liberalization of foreign exchange controls including more liberal outward transfer of funds and provision for Thai individuals and residents to open foreign currency accounts - Authorized companies and authorized persons were allowed to deal in foreign exchange operation - The stock market introduced Automated System for the Stock Exchange of Thailand, a fully computerized trading system

12-Mar-92	The Securities and Stock Exchange of Thailand B.E. 2535(1992) Act was announced
16-May-92	The Office of the Securities Exchange Commission (SEC) began operation
15-Jun-92	The Stock Exchange of Thailand (SET) announced the launch of scripless system, providing for the clearing and settlement of trades and the securities depository service
1992	Foreign exchange controls further liberalized for exporters, financial institutions, and resident and non-resident individuals
1993	BIBF was established, providing offshore financial service
26-Jul-93	The Thai Rating and Information Services (TRIS), the first credit rating agency in Thailand, was established
7-Sep-93	Export-Import Bank of Thailand (EXIM) Act declared to be effective and established in 1994
1-Nov-94	The Bond Dealer's Club (BDC) began operation
4-Jan-94	The SET index saw its all-time high level of 1,753.73 points
8-Jul-94	Initial Public Offering securities, not less than 30 %, must be allocated for retail investors
11-Aug-94	Public offerings of newly issued debentures must obtain credit rating
19-Aug-94	SEC requested cooperation from all securities companies to set up compliance units
15-Oct-94	The SET issued rules requiring marketing officers to obtain sales license from the SET
1-Nov-94	The Bond Dealer's Club (BDC) began operation
3-Jan-95	The SET transferred its securities depository function, clearing function, and registrar function to the Thailand Securities Depository Co., Ltd. (TSD)
7-Mar-95	Banks were required to submit the information on risk control measures on trading in foreign exchange and derivatives in order to improve the supervision on banking system
3-Jan-95	SET transferred its securities depository function, clearing function, and registrar function to the Thailand Securities Depository Co., Ltd. (TSD).
1-Sep-95	Net capital rules (NCR) for securities companies were introduced
1996	- Electric Clearing System starts operation - 7% cash reserve requirement of total short-term borrowing and deposit from abroad
13-Feb-97	Thai Trust Fund Management (TTF) was established, to hold shares on behalf of foreign investors
17-Mar-97	The first day of the implementation of fully-negotiable brokerage commission structure, with the minimum rates for foreign securities companies and foreign clients at 0.3 % and 0.5 %, respectively
2-Jul-97	- The exchange rate of the Baht was float freely (Independently floating) - A two-tier currency market was introduced
8-Aug-97	SEC laid out rules to accommodate asset securitization for domestic private placement offerings and offerings to overseas investors

***Sources*; International Economics, 2000; Alba, Hernandez, & Klingebiel, 2000; Ariff & Khalid, 2005; and SEC, 2004**

According to financial liberalization before the Asian crisis, this section explains the consequences from financial liberalization.

First of all, in 1984, Thailand has been influenced by the international crisis, which was originally in the United States. By that time, Thailand experienced an economic crisis, which closed 25 finance companies. The current account deficit was 9% of gross domestic product (GDP); foreign debt was 19.5% of the total value of exports which finally brought to the devaluation of the Thai Baht (Petprasert, 2000). The U.S. Dollar was overvalued which affected the United States' competition in industry, especially, the automobile industry and export industry. Then, these led to the Plaza Accord of 22 September by five major countries; the United States, France, Germany, and Japan which would aim to interfere with the U.S. Dollars' value in order to reduce the imbalance of global trading. According to the Plaza Accord, the U.S. Dollar's value has been rapidly depreciated, which in two years the U.S. Dollar depreciated by 46% against the Deutsche Mark (German currency), and

50% against Yen (Japanese currency). On the other hand, Japan became stronger in the economic world, which led to the higher appreciation of Yen against others currency that undermining its competitiveness. Then, Japan has shifted its investment to ASEAN (Association of Southeast Asian Nation) countries, Thailand, for example, for the cheaper labor and capital. According to Bank of Thailand data, in 1988 half of total foreign investment in Thailand is Japan, which is 14,607.6 million baht. Plaza Accord and globalization has benefited Thailand, in terms of higher of direct investment and export growth. Financial liberalization in most area has been gradually liberalized to attract the foreign investment. After that, Booming of land price in Thailand influenced the growth of stock market, especially in real-estate business. This boom was the result of the rapid increase in asset prices generated by speculation. In other words, it was a bubble economy (Petprasert, 2000). Alba and others (2000) has mentioned that the liberalization of the capital account and the financial sector resulted in rapid build-up of vulnerability, with both macro and micro manifestations with showed in the increasing in private capital inflows and rapid credit growth.

First of all, the effect of financial liberalization on economic would be the rapidly increased in capital inflow, increase reliance on foreign capital and the shortening of the maturity structure with showed in between 1988–96, according to data from the Bank of Thailand, Thailand received a staggering cumulative amount of US$ 100.3 billion, about 55 percent of 1996 GDP, or 9.4 percent of GDP on average p.a. (Alba, Hernandez, & Klingebiel, 2000). Stock market prices rose by 175% in aggregate and by 395% in property sector (Witchayanon, 2000). In addition, the credit boom would be one of financial liberalization effects, which finance companies had a stronger incentive for lending since they would like to increase their credit portfolio in order to receive a banking license. However there was the increasing of economic activities as well as the economic output, Thai corporate sector has showed the increased leverage. The higher of leverage would be the result of an unbalanced liability structure which in late 1980s corporations built up risky forms of leverage in the form of short-term foreign currency debt and during the 1990s, debt to equity ratio of Thai corporations has been increasing significantly. Remarkably, the operation of Thai financial institutions has showed a risky profile, since the poor quality of their portfolios which would be the result of lending boom and competition in financial sector.

Thus, the Asian crisis occurred because of the increasing financial liberalization, in capital flow, for example, while there was the fixed currency exchange rate. Thus, these would attract foreign investors to invest in Thailand in short term, and then effect the economic boom. According to lending boom and poor quality lending, the banks and finance companies became more vulnerable to economic difficulties in the 1990s, mainly because of two factors, i) by lending excessively to sectors or firms whose debt service capacity was particularly susceptible to shocks; and (ii) by reducing their own capacity to absorb negative shocks, especially by exacerbating currency and maturity mismatches, by mispricing loans, and by under provisioning for future potential losses (Alba, Hernandez, & Klingebiel, 2000). According to the Asian crisis, the Thai financial system has been forced to liberalize which will be explained in the section below.

During The Asian Crisis

The Asian crisis could be dated at 27th June 1997 since the minister of finance announced the change of exchange rate basis from the basket currency to the managed-float system which would show the result in a devaluation of Thai baht. In 1997, fifty-six finance companies, which accounted for a quarter of the total industry, closed. The remaining financial institutions were strengthened by improvement in supervision and greater foreign ownership and recapitalization. Accordingly, the over investing and spending by private investors would be blamed as one of the main causes of the crisis. Over investing and spending by private investors would be the result of the fixed exchange rate of Thai Baht to U.S. Dollar. In Feb 1996, the stock exchange of Thailand index had fallen by over 50 percent from its peak because of the huge amount of capital outflow from foreign investors and the rumors of floating of the Thai Baht. In May 1997, the Baht came under strong selling pressure based on deteriorating economic fundamentals (Black & Black, 1993). Accordingly, IMF has influenced Thai financial system during this crisis, since lending loan of 15 billion U.S. dollars in August 1997.

The main solution of Thai financial sector, by that time, would be keeping the financial sector existent: the state stabilized the sector by guaranteeing most deposits and thus the existence of banks which would try to resolve the non-performing loans (NPL) with the help of bad-debt resolution mechanisms, called asset management corporation and recapitalization of financial institutions (Menkhoff & Suwanaporn, 2007).The relaxation of regulations was done in order to increase stability and develop the banking system.

Commercial banks and financial institutions' regulations have been changed, for example, the regulation for debt restructuring and collateral appraisal and the financial sector restructuring plan in 1998. The regulation of loan classification, provisioning and reporting standards were tightened because bank of Thailand aimed to upgrade local financial institutions to international levels by the year 2000. Moreover, after the crisis, there has been a higher participation of foreign banks in the Thai financial sector thanks to the relaxation of foreign owner regulations in bank licenses (from 25 percent to 49 percent). Accordingly, foreign institutions have gained a market share of more than 15 percent and their influence on the Thai financial system is stronger than ever before (Menkhoff &

Suwanaporn, 2007). Moreover, in 1999, a credit bureau was officially operated for helping interchange debtor date among creditors, reducing credit risk and raising efficiency levels in risk assessment and management. Speaking of the foreign exchange market control, financial institutions were allowed to engage freely in spot foreign exchange transactions involving the Thai Baht with non-residents from 30 January 1998. As capital control, in July 1997, Thailand experienced a net capital outflow which would lead to temporary capital outflow control, such as, restriction of Baht transfers to non-residents in 1997 -1998.

During the Asian crisis, several listed companies in the stock market faced some financial constraint. In 1998 the SET authority excluded stocks of such companies to be traded in a separate group entitled companies under rehabilitation (or REHABCO) which served as a new channel to provide assistance in coordinating debt restructuring for listed but troubled companies (Vichyanond, 2007). Moreover, in June 1999 the Market for Alternative Investment (MAI), the secondary market for securities of small and medium sized companies introduced and started securities transactions in September 2001.

Table 3: the liberalization of financial system during Asian crisis, Jun 97 – 1999

27-Jun-97	- The exchange rate of the Baht was changed to float freely basis (Independently floating) - The authorities introduced a two-tier currency market that created to separate exchange rates for investors who bought Baht in domestic and overseas markets - Thai Finance Minister orders 16 finance companies to be closed
Aug-97	- -13 finance companies and 29 finance and securities companies were suspended operation and required to submit plans for rehabilitation and operation - IMF approves a total support package of US$17 billion for Thailand - The Board of the SEC laid out rules to accommodate asset securitization for domestic private placement offerings and offerings to overseas investors - The SEC laid out rules to accommodate asset securitization for domestic private placement offerings and offerings to overseas investors
20-Aug-97	- IMF Executive Board approved a three-year Stand-By-Arrangement of US$4 billion - World Bank and Asian Development Bank pledged US$2.7 billion while Japan and other countries contributed US$10 billion
Sep-97	BOT tightened loan classification and bank licensing rules
8-Dec-97	- First Quarterly Review of the IMF program, additional fiscal measures introduced - Indicative range interest rates and time-frame for financial sector restructuring announced - The FIDF announced that there were only two companies, whose rehabilitation plans were passed, resulting in the number of finance and securities companies and securities companies decreasing from 84 to 45
7-Jan-98	Measures announced to enhance foreign currency flows
30-Jan-98	BOT abolished two-tier foreign exchange market; accordingly, the financial institutions are allowed to engage freely in spot foreign exchange transactions involving Thai baht with non-residents
4-Mar-98	Broad changes proposed in the second quarterly review of the IMF program (with a shift to accommodating fiscal policy)
31-Mar-98	BOT modified the financial institutions' supervision standards
10-Jun-98	Third quarterly review of the IMF program recommended an increase in the allowance for fiscal deficit target from 2% of GDP to 3% of GDP
14-Jul-98	- BOT announced interest rate ceiling on deposits; accordingly, maximum deposit rate of commercial banks

	was set at 2% above the savings deposit rate announced by the BOT - the maximum rate on promissory notes issued by finance companies was set at 3% above the reference savings deposit rate announced by the BOT
31-Jul-98	Rules governing the composition of liquidity requirement on short-term foreign borrowing modified
Jul-98	BOT announced regulations for debt restructuring and collateral appraisal
14-Aug-98	BOT announced financial sector restructuring plan
21-Aug-98	Interest rate ceiling for negotiable certificate of deposits set at the reference rate plus a margin of 3%
25-Aug-98	- Capital Adequacy Ratio of commercial banks maintained at 8.5% but its composition of tier 1 capital reduced from a minimum of 6% to 4.25% - Capital Adequacy Ratio of finance companies and finance and security companies maintained at 8.0% but its composition of tier 1 capital reduced from a minimum of 5.5% to 4.0%
Oct-98	Revision of Bank of Thailand laws; completion of amendments to foreclosure laws
Dec-98	- Completion of disposal of assets of 56 (of 58 suspended) finance companies - New prudential regulations - Stronger rules governing disclosure, auditing and accounting practices - New deposit insurance scheme
14-Jan-99	SEC expanded category of securities by including derivative warrants as a type of security
1-Feb-99	BOT reduced bank rate to 7% per annum
23-Apr-99	- Composition of liquidity reserve assets of commercial banks and BIBFs modified - The deposit at the BOT reduced from not less than 2% to 1% of deposit and short-term foreign borrowing
19-May-99	SEC imposed a ratio for securities investment on mutual fund (no more than 25% of the amount of its unit trust)
26-May-99	SEC amended the regulation on securities borrowing and lending
15-Jun-99	BOT announced criteria, procedure and conditions for financial institutions participating in the tier 1 and tier 2 capital support schemes of the Ministry of Finance
21-Jun-99	The Market for Alternative Investment (MAI), the secondary market for securities of small and medium-sized enterprises
25-Jun-99	BOT reduced bank rate to 5.5% per annum
1-Jul-99	BOT announced measures to improvement cheque and payment clearing system
9-Jul-99	Bank rate is reduced to 4% per annum
Aug-99	- Some modifications to the capital adequacy requirements announced - The August 14 financial package, the financial sector recovery plan
Sept-99	Credit bureau was officially organized, the central credit registration.
Jun-Dec 99	Government announced measures to promote bond market

***Sources*; International Economics, 2000; Alba, Hernandez, & Klingebiel, 2000; Ariff & Khalid, 2005; and SEC, 2004**

After The Asian Crisis

During the Asian crisis the Thai financial sector had been forced to liberalize in order to get through the financial constraint. This study defines the financial Asian crisis between July 1997 and Dec 1999 since the recovery signs in either GDP or foreign investment flow. For instance, Thailand's economy returned to positive growth in late 1998, and GDP growth reached over four percent in 1999 and should grow by 4.5-5.0 percent in 2000 (IMF, 2000). However, liberalization has not been stopped after the recovery but still goes on since the competition of international aspects and so forth. For instance, the stricter restrictions on short-term speculative inflow (30% of reserve requirement on short-term capital inflow in 2006) and relaxation of capital outflow control between 2006 and 2008, the capital inflow has rapidly increased in Thailand, causing the Thai Baht to rapidly appreciate against the U.S. Dollar. Moreover, by the end of 2008, financial institutions applied Basel II which covered credit risk and market risk aspects. Notably, in 1999 the Thai financial sector launched “the August 14 financial package” in order to recover and restructure the financial institutions. The August 14 financial package enabled the government to issue up to Baht 300 billion in bonds to help with financial sector re-capitalization (Sussangkarn, 2000).

Consequently, financial institutions in Thailand after the Asian crisis would be developed by the August 14 financial package and the Thailand's Financial Sector Master Plan which the Bank of Thailand set in 2002. The financial sector master plan mainly aims in a restructure of the financial system with improving basic infrastructure of financial system, improving competitiveness of individual financial institutions, removing regulatory impediments to financial sector development and improving systemic efficiency through strengthening of market based mechanisms (Bank of Thailand, 2006). Moreover, the Thai capital market has been developed according to “the Capital Market Development Plan” which was introduced in 2002 and intends to push the development plan further longer in 2009-2013. Accordingly, The Thai capital market is the primary mechanism for aggregating, channeling, and monitoring economic resources. The goal of the capital market is to perform these tasks efficiently to increase overall competitiveness of Thailand.

> *“The Committee has formulated 6 primary missions and objectives to realize this vision: (1) Capital market must be easily accessible by investors seeking investment opportunities and corporations seeking funds, (2)Increase quality and variety of products and services, (3)Reduce cost of funds to issuers and any intermediary and transaction costs to investors to enable Thai companies to become more competitive, (4) Develop efficient infrastructure framework in legal, regulations, accounting, tax, information, technology and enforcement, (5)Educate investors and ensure that adequate protection mechanism are in place, and (6)Promote competition in the Thai capital market and build links with the global market system” (Stock Exchange of Thailand, 2009)*

In 2000, corporate income taxes on firms listed in SET and MAI was reduced from 30 percent to 20 percent and 20 percent, respectively, which would attract domestic firms to raise funds in domestic capital markets. In 2003-4 SET broadened the scope of its operations in several respects. For example, the Bond Electronic Exchange (BEX) was organized to facilitate bond transactions via an electronic system, Siam DR Co., Ltd. to issue and transact depository receipts, Thailand Futures Exchange Public Co., Ltd. to function as a center for transactions of financial futures contracts or derivatives. These new units should help develop Thailand's capital markets into an integrated one which is well equipped with various investment options including stocks, bonds, and derivatives (Vichyanond, 2007). Besides, in 2004 SET established the Securities Investor Protection Fund (SIPF) in order to provide protection to the benefits of Thai investors. The one of surprisingly issues of Thai financial system is in 2003, which Thailand had fully reimbursed the IMF loan. This increased investor confidence the Thai economy, especially for foreign investment.

Speaking of the stock market due to its innovation, the new channel of trading stock in Thai stock market, internet trading, was launched in 2000 which is the new alternative trading channel for investor with lower cost; commission. The new product in Thailand future exchange market (TFEX), SET50 Index Futures, was launched in 2006, followed by SET50 Index Option, Single Stock Futures and Gold Futures. Moreover, in 2010 Thailand Future market has planned to introduce new products, Mini Gold Futures and Interest Rate Futures to serve customer needs. January 2010, the Stock market is going to reduce the commission fee of securities trading, also called "Sliding Scale".

In conclusion, financial liberalization has been running in the Thai financial sector since 1980. There was an extraordinary period during the Asian crisis, which caused greater liberalization after that. Thus, this study would like to investigate the impact of financial liberalization on the stock market and foreign investment after the Asian crisis liberalization. But, this study keeps in mind that the financial crisis would affect either foreign investment or economic output in that period. So, this study is going to focus more on the period after the Asian crisis, which would use 2000 as financial liberalization date as the there was "the August 14 financial package" in Aug 1999, which the author explains in more detail later.

Table 4:: the liberalization of financial system After Asian crisis, from 2000

Jan-00	- Stock Exchange Market of Thailand approved the securities transaction through the Internet - BOT announced the criteria for non-performing assets and regulations with which the asset management companies must comply
19-Feb-00	The BOT announced criteria for the use of the Internet for the services of commercial banks, finance companies, and credit foncier companies
Mar-00	- BOT issued regulations on bond repurchase agreement to facilitate intraday liquidity - SEC revised rules and regulations governing public offering of securities to be more toward disclosure-based, allowing investors to make investment decisions for them
23-May-00	- Monetary Policy Board of the BOT announced for the first time the use of the 14-day repurchase rate as the key policy rate within the inflation target framework; the rate was set at 1.5% per annum - BOT allowed commercial banks to resell foreign exchange securities to domestic investors
12-Sep-00	BOT decided to abolish the credit targets for various economic sectors
26-Feb-01	Regulations for finance companies and credit foncier companies on lending, deposit taking, and funding from the public
1-Apr-01	SEC set criteria for establishing Retirement Mutual Fund

12-Jul-01	The 14-day repurchase rate increased to 2.5% per annum
1-Oct-01	BOT abolished the bank rate to increase the effectiveness of its policy interest rate (the 14-day repurchase rate) as a signal
16-Oct-01	Revision on criteria, conditions and procedures for establishment and operation of Foreign Investment Fund
25-Dec-01	The 14-day repurchase rate reduced to 2.25% per annum
Jan-02	- The 14-day Repurchase rate reduced to 2% per annum - Establishment of the Financial Sector Master Plan Committee to guide the FSMP development process.
29-Mar-02	Bangkok Metropolitan Bank PCL and Siam City Bank PCL merged
11-Sep-02	BOT allowed financial institutions to include debt instruments issued by government agencies or state enterprises established under specific laws in the maintenance of liquid assets
19-Nov-02	14-day Repurchase rate reduced to 1.75%
2003	Thailand fully reimbursed IMF loan
2006	Control of Short-term capital inflows with nonresidents: increase reserve requirement to 30%
2006	SET50 Index Futures, SET50 Index Option, Single Stock Futures and Gold Futures were launched in Thai Future Exchange Market
2008	- the new trading system, called “Advance Resilience Matching System (ARMS)” - BOT will adopt Basel II to financial institution by the end of 2008 for risk management - Cancellation of 30% reserve requirement of control of Short-term capital inflows with nonresidents

***Sources*; International Economics, 2000; Alba, Hernandez, & Klingebiel, 2000; Ariff & Khalid, 2005; and SEC, 2004**

Data and Methodology

In order to investigate the impact of financial liberalization on the growth and volatility of the Thai stock market and foreign investment in the stock market, this study will apply the event studies using administrative data mainly from the Stock Exchange of Thailand. It was decided that the best method to adopt for this investigation was event study using administrative data to demonstrate particular social phenomena, in this case the Thai stock market and foreign investment in the Thai stock market.

Data

In this study, the data mainly was gathered from Stock Exchange of Thailand (SET) by using the SETSMART program, developed by the Stock Exchange of Thailand to process the display of the data from the database located at the Service Provider's office (http://www.setsmart.com) at a various time points during the 1992 – 2008 academic years.

First of all, the main data in this study are the value trading and market index, SET index. The value trading data is included the value trading by each investor types; local investor, foreign investor, properties trading, and local institution. The data would provide in quarterly basis between the first quarters of 1992 to the fourth quarter of 2008. The summaries of SET value trading data had shown in the Table 5 in form of the maximum, minimum and mean values of overall observations and after that the overall observations were plotted as a graph in Figure 3. The definitions of data are as below;

Value trading data is the total million Baht of trading on the Stock Exchange of Thailand (SET). The value data was considered that it would usefully supplement and extend the analysis with both foreign investment and stock market aspects. The value trading data could interpret the trading behavior in each investor groups, especially foreign investor. Thus, this study can explain the growth and volatility after the financial liberalization.

Market Index, also called SET Index, is an index that interprets the price movement for all common stock trading on the Stock Exchange of Thailand (SET). The SET index was perceived as the representative index of the Thai stock market. Practically, the SET index is calculated from the prices of all common stocks including unit trusts of property funds on the main board. AS the base value adjustment, the SET Index calculation is adjusted in line with modifications in the values of stocks resulting from changes in the number of stocks due to various events, e.g., public offerings, exercised warrants, conversions of preferred to common shares, in order to eliminate all effects other than price movements from the index and the base date is April 30, 1975.

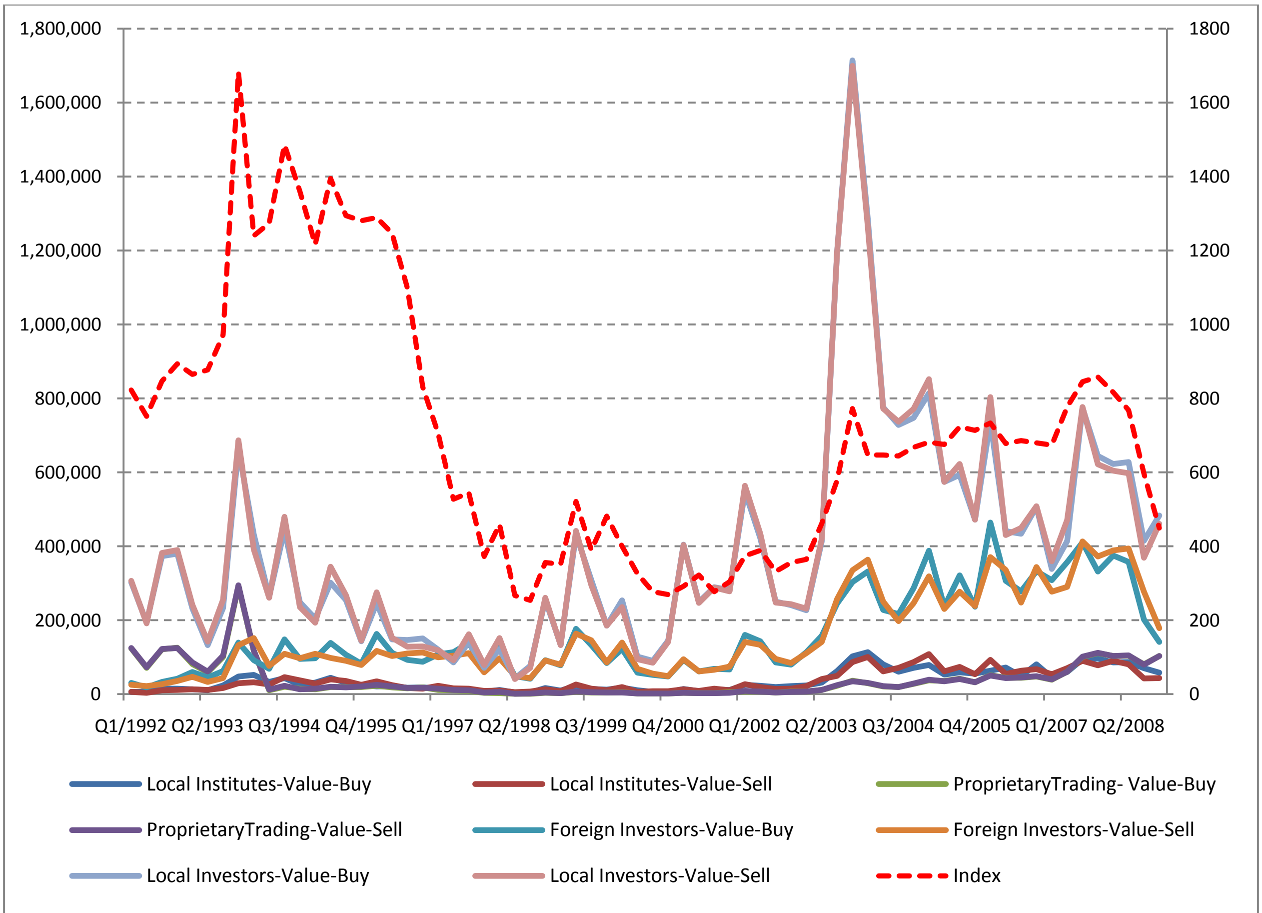
DATA SET

Table 5: the summarize of the value trading data(million Baht) in the Thai stock market, classified by investor group an SET index between Q1/1992 and Q4/2008

Investor		*Max*	*Min*	*Mean*	*SD*
Local Institutes	Buy	113,575.55	4,660.86	38,399.80	29,643.14
	Sell	108,720.92	4,143.66	38,004.66	29,272.62
Proprietary Trading	Buy	292,122.47	1,084.05	44,635.45	53,842.07
	Sell	294,691.83	1,482.30	45,223.38	53,917.01
Foreign Investors	Buy	464,459.47	18,908.01	162,789.09	110,742.17
	Sell	413,070.47	21,676.29	159,243.71	108,451.15
Local Investors	Buy	1,714,384.79	42,712.24	405,453.58	300,586.23
	Sell	1,699,562.83	41,273.79	408,806.18	301,920.43
Total		2,156,870.27	97,320.18	651,277.92	434,661.47
Index		1,682.85	253.82	701.17	338.70

Source: SETSMART

Figure 3: Graph of the value trading data(million Baht) in the Thai stock market, classified by investor group and SET index (right axis) between Q1/1992 and Q4/2008

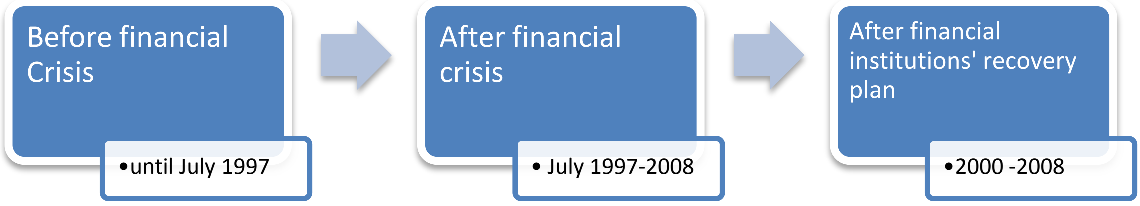


Dating Financial Liberalization

In order to examine the impact of financial liberalization on the growth and volatility of the stock market and foreign investment, this study separates the duration into a specific period. It would be difficult to recognize financial liberalization dates because in Thailand financial liberalization was introduced in the 1980s and has been ongoing. Plus, there are the limitations of available data that provide mainly from 1992. Thus, this study would use the Asian crisis, August 1997, as the financial liberalization date to investigate the impact of financial liberalization on the stock market and foreign investment. Even though, the Asian crisis already took place before August 1997, but this study would rather focus on the financial liberalization than the Asian crisis. Thus, this essay examines the situation pre the Asian crisis (until 1997) and post crisis (from 1997-2008). The post Asian crisis period was selected on the basis of a remarkable liberalization of financial systems with the cancellation of currency exchange basis leading to the balance of money inflow and outflow.

However, this study keeps in mind that during the Asian crisis, the stock market and foreign investment in stock market may have been affected because of the immediate plan and policy to cope with the crisis. And the regulations which, by that time, were launched in order to reduce the money flow and so forth would lead to unbalancing of financial systems. For example, the average daily trading value in 1997 and 1998 had dramatically decreased, from 5297.33 million baht in 1996 to 3,763.57 and 3504.79 million baht in 1997 and 1998, respectively. Thus, to control for bias from the Asian crisis, the study includes the period between 2000 and 2008, according to the financial institution recovery plans, “14 August package”, in late 1999. The 14 August package aimed to strengthen the financial system as well as to restructure the management of the intervened banks and finance companies in order to enhance their capacity to recover the relatively large amount of non-performing loans and to continue their operation under good governance. According to the 14 August package, the Bank of Thailand had to intervene in the affairs of two commercial banks and five finance companies; Laem Thong Bank PLC., Union Bank of Bangkok PLC., Dhana Siam Finance and Securities PLC., First City Investment PLC., IFCT Finance and Securities PLC., Vajiradhanathun Finance Co., Ltd., Thai Summit Finance and Securities Limited. Consequently, Thailand used about 5300 thousand million bath, about 10 % of GDP in 2000 for the recovery plan. Four commercial banks and 13 finance companies had been deleted, and two of them had changed its owner structure (75% of total shareholder is non-Thai); United Overseas Bank (Thai) and Standard Chartered Bank.

Figure 4:the time line using in this study, before Asian crisis, after asian crisis, and after financial institutions' recovery plan.



Therefore, to measure the impact of financial liberalization on growth and volatility of foreign investment and the Thai stock market, a question asking three periods of time these being; before the Asian crisis (Q1/1992-Q3/1997), after financial crisis (Q3/1997-Q4/2008) and after financial institutions' recovery plan(Q1/2000-Q4/2008).

The Administration Data Method

First of all, administration data would be used to study the growth of foreign investment in the stock market exchange of Thailand.

1. Growth

Theoretically, financial liberalization is believed to be one of the main growth drivers in the stock market as same as foreign investment in stock market. To compare the growth after financial liberalization, growth measurement was used to describe.

First of all, the value trading data was adjusted in two forms;

1. Total trading data

$$f(x_{i,t}) = a_{i,t} + b_{i,t} \qquad \text{.....Equation} \quad 1$$

When

$f(x_{i,t})$ = total value trading of investor i at time= t

$a_{i,t}$ = buying value of investor i at time t

$b_{i,t}$ = selling value of investor i at time t

2. Net trading data

$$f(y_{i,t}) = a_{i,t} - b_{i,t} \qquad \text{.....Equation} \quad 2$$

When

$f(y_{i,t})$ = net value trading of investor i at time t

Total of trading data helps for understanding trading behavior of each investor in terms of the total inflow and outflow (magnitude) in the Thai stock market. While the net of trading data is the size of net value trading that the investors invest in the Thai stock market

Once the value trading data were adjusted, the process of growth measurement was carried out using methods as follows;

1. Mean

$$\mu(x_{i,t}) = \frac{\sum_{i=1}^{n}\left(f(Z_{i,t})\right)}{n(x)} \qquad \text{... Equation 3}$$

When

$\mu(x_{i,t})$ = Mean of data set i at time t

$n(x)$ = Number of observations

$f(Z_{i,t})$ = the data set i at time t

Using arithmetic mean helps to understand the average of value trading and the market index in each particular period and the given that the data set is in a frequency distribution. This method gives the average size of foreign investment and stock market in each time period, and this essay will compare different periods to analyze the impact on growth and volatility of foreign investment in the Thai stock market and the Thai stock market. Nevertheless, the arithmetic mean would not solely explain the whole picture, since there would be some outliner or significant value, which would be missed. Thus, this essay keeps in mind that the mean value would be non-bias when the data set is a frequency distribution.

2. Percent change

$$\Delta x_{i,t} = \frac{x_{i.t} - x_{i,t-1}}{x_{i,t-1}} \qquad \text{... Equation 4}$$

When

$x_{i,t}$ = the data set i at t period

$x_{i,t-1}$ = the data set i at $t-1$ period

This study aims to look at the impact of financial liberalization on the growth of the stock market and foreign investment. The author considers that there would be some change during the specific time as a result of financial liberalization. The percent change of both total trading and net trading data would give a better understanding of investor behavior which would reflect on financial liberalization. The percent change of data would give an understanding of growth.

3. Proportion of trading value in each investor group

$$f(z_{i.t}) = \frac{a_{i,t}}{m_{i,t}} \quad \text{... Equation 5}$$

When

$f(z_{i.t})$ = the proportion trading value of data i at t period

$a_{i,t}$ = the data set i at t period

$m_{i,t}$ = the data set i at t period

The proportion of investor group trading would describe the percent share of each investor group in the Thai stock market. Then, the percent shares of each explains the reason of changing in stock market index in each period.

Thus, the above methods will provide the changing phenomenon of observations; the growth of foreign investment and stock market after financial liberalization. After this study demonstrates the impact of financial liberalization, the volatility after liberalization will be taken into account.

2. Volatility of Market Index and Foreign Investment

According to literature reviewed, financial liberalization may decrease the volatility of stock markets after financial liberalization, whereas the volatility of foreign investment has not widely been studied. This essay then examines the volatility of the stock market and foreign investment in the Thai stock market in three periods; before the Asian crisis, after the Asian crisis, and after the financial institution's recovery plan. In order to examine volatility, this study applies financial statistic functions; standard deviation, and coefficient of variation, to explain the volatility of foreign investment in Thai stock market and the stock market itself.

1. Standard Deviation

2. $$\sigma = \sqrt{\frac{1}{n}\sum_{t=1}^{n} f_i(c_i - \mu(c))^2} \quad \text{... Equation 6}$$

When

σ = the standard variation

c_i = the observations data i at t period

$\mu(c)$ = the mean of observation data i

This shows the volatility of market and foreign investment in different periods. The standard deviation is used to measure the spread of distribution about the data set's mean. However, in this analysis would be limited by the limitation of administration data, only quarterly data basis and between 1992 and 2009.

3. Coefficient of variation

$$CV = \frac{\sigma}{\mu} \quad \text{... Equation 7}$$

This study applies coefficient of variation to verify describe the variation of foreign investment trading value and stock market. The coefficient of variation, or CV, explains the variation of the standard deviation to the mean and it expresses the variation as a percentage of the mean (http://www.westgard.com/lesson34.htm). Using the coefficient of variation would be describing the variation of data clearer than SD does in term of comparing the degree of variation between data sets. The lower of CV refers the lower of standard deviation to mean's ratio, the lower volatility and vice versa.

As mentioned, the overall statistical formulas describe the impact of financial liberalization on the growth and volatility of financial investment in stock market and stock market after financial liberalization.

Assumptions and Limitations

In order to investigate the impact of financial liberalization on the growth and volatility of foreign investment in the Thai stock market after financial liberalization, our findings in this report are subject to at least three limitations.

First of all, the observation data; since the openness of data in the stock exchange market of Thailand is still limited. This study will be limited by restricted data which was available only in the period between Q1/1992 to Q4/2008 and only on quarterly basis. However, this author believes that the quarterly data from 1992 to 2008 will describe the impact of financial liberalization on the growth and volatility of foreign investment and stock markets after financial liberalization.

Second, it is not easy to define the exact date of financial liberalization so this study assumes no exact date can be established. The financial liberalization that occurred during the Asian crisis had been launched in different dates, thus this study would roughly assume a financial liberalization date as the third quarter of 1997 and the first quarter of 2000.

In order to change the growth and volatility of stock markets and foreign investment, there are many related factors, for example, domestic factors (e.g. political and economic) and international factors (other countries' politics, interest rates, for example). The current study was unable to analyze other factors related to the growth and volatility of foreign investment and stock markets after financial liberalization. Moreover, this essay could conceivably have hypothesized that the changing of stock market indices and foreign investment in stock market has been influenced by financial liberalization only.

Results

Recently, financial liberalization has become well known as one of mechanisms for increasing foreign investment with the relaxation of regulations and barriers to investment in a particular country and lead to increase economic output. Thailand has experienced financial liberalization since the 1980s and during this time has been liberalizing financial sector.

The increasing of financial liberalization is probably the result of either domestic factors or international factors. For instance, financial liberalization before the Asian crisis in 1997 could be the result of various international factors since the Thai financial sector has developed to increase competitive advantage in the global market using regulation and policy to attract foreign investment in the country. In other words, financial liberalization is the result of either economic constraint or the further development of an economy. According to the methodology of this study this section will give a better understanding of financial liberalization's impact on the growth and volatility of foreign investment in the Thai stock market and stock market itself. As mentioned, this study describes the impact in three periods; Q1/1992-Q3/1997, Q4/1997-Q4/2008, Q1/2000-Q4/2008.

The Growth of Foreign Investment in the Thai Stock Market

The first issue under investigation is "does the financial liberalization increase the stock market growth and foreign investment in the stock market". This essay looks into the growth of foreign investment in the Stock Exchange of Thailand using growth measurement and shown as the average value in each period as illustrated in Table 6. There was a growth in foreign investment after the Asian crisis liberalization, including buy value, sell value and total value trading much higher after the financial institution's recovery plan. For example, the total value trading value of foreign investment has shown an increasing average of 390,366 million Baht and 442,640 million Baht per quarter in period Q4/97-Q4/08 and Q1/00 – Q4/08, respectively.

Table 6: the effect of financial liberalization on foregin investment and stock market, between Q1/1992 – Q4/2008

	Expected	Mean		
	(+/-)	Q1/92 - Q3/97	Q4/97-Q4/08	Q1/00-Q4/08
Foreign investment				
- buy value		90,413	196,162	221,521
- sell value		84,263	194,204	220,118
- total value Foreign investment	+	174,675	390,366	441,640
- Net value Foreign investment		6,150	1,958	1,403
- %change of FI total value		13.95%	8.93%	7.94%
- %change of FI net value		37.92%	132.03%	148.75%
- % of total buy		24.23%	27.85%	26.30%
- % of total sell		22.7%	28.4%	26.1%

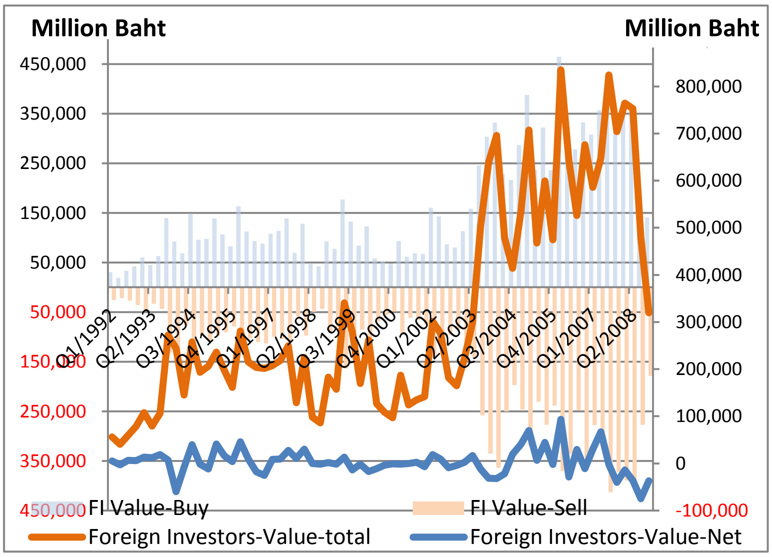


Figure 5: Value trading of foreign investor (Million Baht) between Q1/1992 and Q4/2008(total and net value-right axis)

But net value trading by foreign investors had decreased after the Asian crisis' liberalization and was lower after the financial institution's recovery plan.

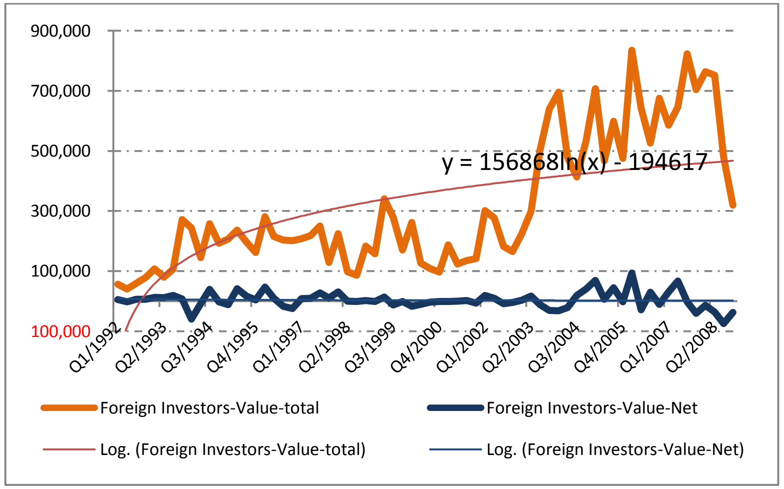
This section also describes the average percent change of foreign investment in each period, in order to examine rate of change of foreign investment in each quarter and then explains an average of growth rate in each period. The average growth rate of foreign investment in the Thai stock market showed a higher rate after financial liberalization in terms of buy, sell value trading, and net trading value. The net value trading of foreign investment has shown a significant reduction after liberalization, which shrank from 6,150 million Baht to 1,958 million Baht and 1,403 million Baht in periods Q4/97-Q4/08 and Q1/00 – Q4/08, respectively. But, the growth rate of total foreign investment value trading showed a lower growth rate after the Asian crisis' liberalization, and even lower after the financial institution's recovery plan. Moreover, foreign investment in the Thai stock market is also illustrated in the graphs, as figure 5, 6, and 7.

Figure 5 shows foreign investment; buy value, sell value, total trading value, and net trading value (million baht). Accordingly, the graph shows that total foreign investment has increased during the recorded period. However, the net trading of foreign investors has showed a stable trend over this time. Apart for arithmetic mean, this study would look through specific periods if there are any significant issues that could be relevant, as shown in figure 8. According net value of foreign investment in the stock market, the net value has shown a gradual stable trend. In period 2, betweenQ1/1992 and Q2/1997, the net value of foreign investment has shown a fluctuation trend, and then it becomes much more stable after the Asian crisis liberalization and underwent more fluctuation again in 2005. The total overall foreign investment is an increasing trend but has shown a rapid increase during 2003, and then the total value reduced in late 2008. During the years studied, the percent change of total foreign investment has slightly decreased, whilst the percentage change of net foreign investment showed a gradual increase. The percentage change of total foreign investment has showed quite high fluctuations in the years 1997 – 2000, and there has been significant change around Q1/2006 that evidenced rapid growth in both total foreign investment and net foreign investment.

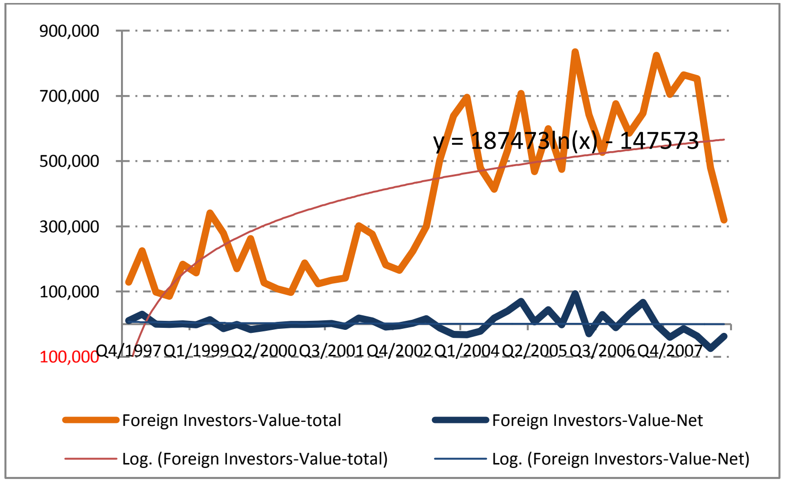
These results may explain that financial liberalization in Thailand increase the growth of foreign investment in the Thai stock market. After financial liberalization in the Asian crisis foreign investment in the Thai stock market increased and further increased after the financial institution's recovery plan. It is notable that in 2003 there was a dramatic increase of total foreign trading value in the Thai stock market that was the result of significant increases in both selling and buying value of foreign investors. A possible explanation for this might be that Thailand had fully reimbursed their IMF loan in that year; two years before the due date. This may have increased confidence or encouraged physical investment in the economy and the Thai stock market. It is seen as suggestive of the strength of the Thai economy. However, the net trading value of foreign investment which had shown no significant changes after financial liberalization is questionable. Because, it illustrates foreign investors speculate and take profit from short term investments or speculative investments, which, in my point of view, is one sign of unstable investment leading to a vulnerable economy. However, unstable investments will be investigated in the volatility of foreign investment and stock markets later on.

Figure 6: the graph of total and net foreign investment, in 4 period of time

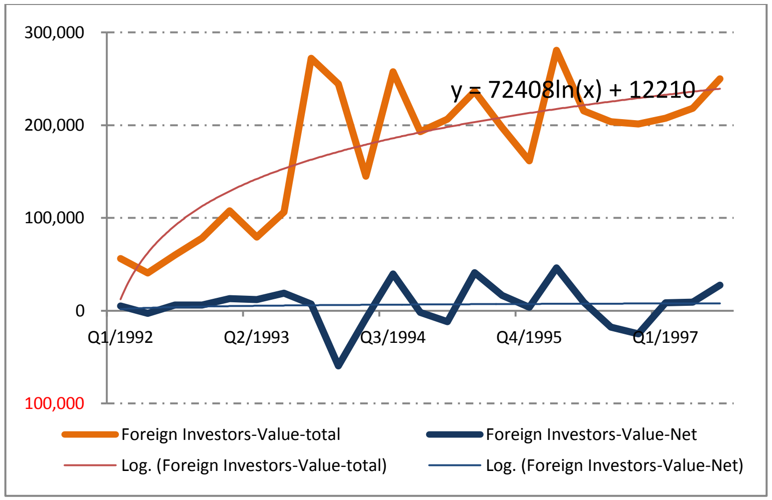
1:Q1/1992-Q4/2008



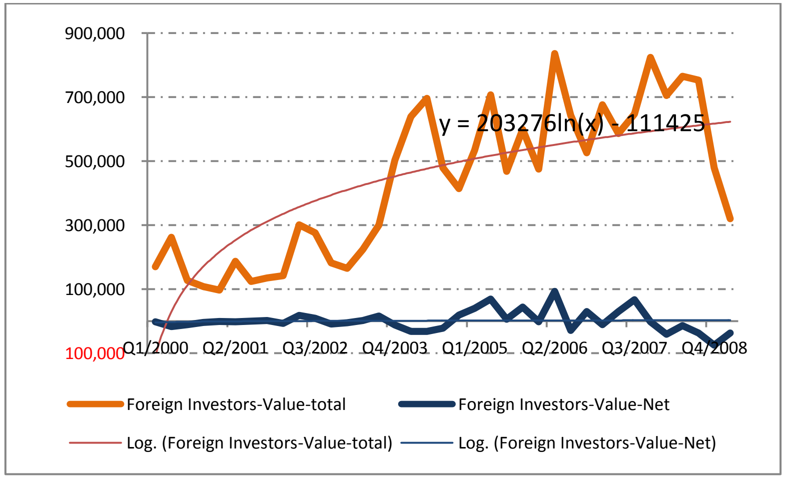
3:Q4/1997-Q4/2008



2:Q1/1992-Q3/1997



4:Q1/2000-Q4/2008



The Growth of the Thai Stock Market

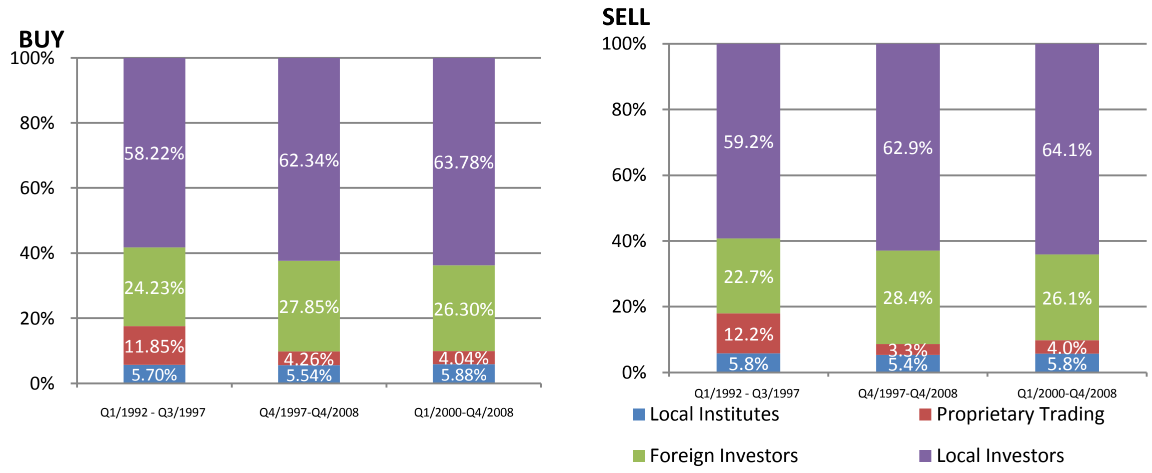
This section describes the growth of the Thai stock market after financial liberalization. This study applies the SET index as the representative of the Thai stock market. The SET index is "calculated from the prices of all common stocks including unit trusts of property funds on the main board. As the base value adjustment the base date is April 30, 1975" (Stock Exchange of Thailand). The results obtained from the preliminary analysis of the impact on the growth of the stock market are presented in Table 7 and also in appendix 1. According to administrative data, there was a huge decrease of the SET index after the Asian crisis; the average market index dropped to 522.55 in after this event, from 1,065.30 before the crisis period. But, after the financial institutions' recovery plan, the market index has shown an increase. The average market index rose from 522.55 between Q4/97 and Q4/08 to 557.25 between Q1/2000 and Q4/2008. The explanation of the higher average of net value trading could be the result of net value trading mostly increasing in each investor group (see appendix1). However, it is interesting to note that the percent change of market index of liberalization after Asian crisis has showed a higher rate than the percent change market index in after financial institution's period as shown in Table 7. Thus, it would refer to the gradual change after financial institution's period.

Table 7: the effect of financial liberalization on stock market, between Q1/1992 – Q4/2008

	Expected	Mean		
	(+/-)	Q1/92 - Q3/97	Q4/97-Q4/08	Q1/00-Q4/08
Market Index				
- Market Index	+	1,065.30	522.55	557.25
- %change of Market Index	+	-0.17%	1.24%	0.70%

The SET Index is an index interpreting the price movement for all common stock trading on the SET, thus, in order to investigate stock market growth, this study would include total value as one driver. Over the period researched the total value trading has increased while the SET index has dropped during the Asian crisis, and then rapidly climbed up during 2003; as shown in figure 9. Moreover, this essay also examines the percent shares of investor groups; local institutions, foreign investment, proprietary trading and local investors in order to investigate the proportion of foreign investment in the Stock Exchange of Thailand and also the stock market itself (see also Appendix 1). As figure 7 shows that foreign investment was accounted as the second largest investor group, classified by value trading, which increased after liberalization, either in the sell or buy side. Surprisingly, in the sell side foreign investment has shown a higher percentage after liberalization (Q4/1997 – Q4/2008) and then the sell value has slightly decreased after the financial institution's recovery plan.

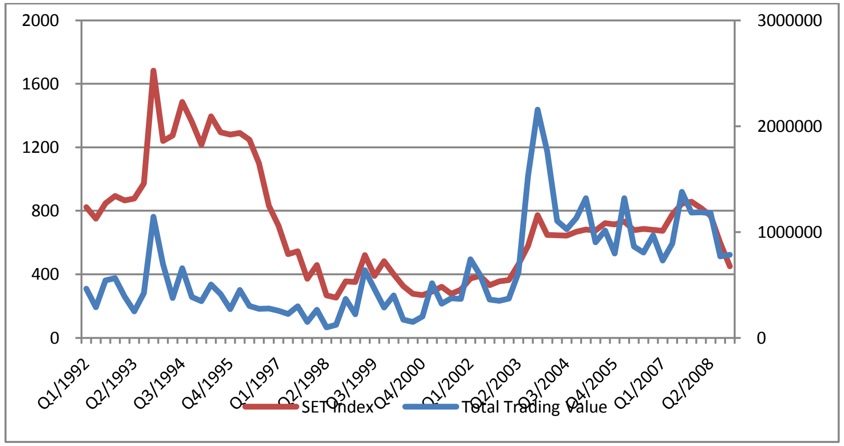
Figure 7: the propotion of trading value(buy-sell), classified by investor groups, between Q1/1992 – Q4/2008



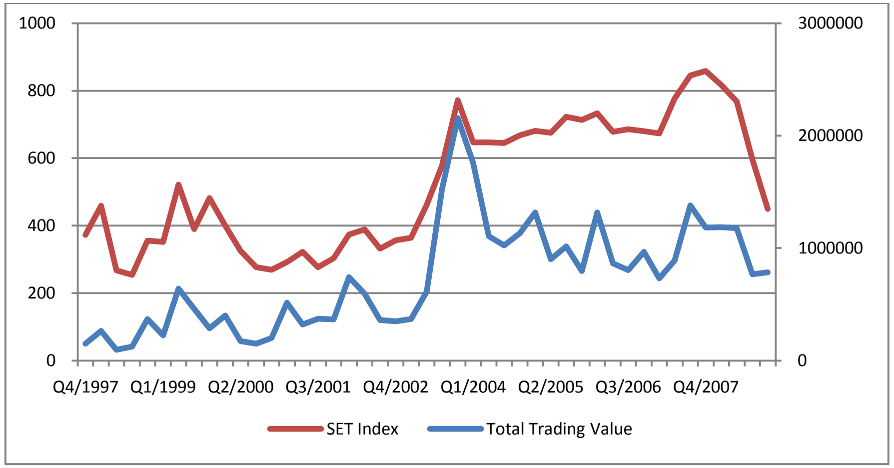
Thus, Thai stock market growth had been affected by the Asian crisis in late 1970 which showed a dramatically decrease in SET index. After that the stock market index has slightly increased but also could not go back to its peak point. Moreover, the market index of the Thai stock market also showed a significant high in 2003, from 356.48 points in 2002 to 772.15 points. This is probably the result of the repayment of IMF loans two years before schedule. Moreover, as in figure 8 (4), around 2007 the stock market index had decreased from 713.73 in 2006 to 679.84 in 2007. This probably is the result from instability which arose in Thailand after Thaksin Shinawatra, the prime minister at that time, was ousted by a military coup in September 2006 accused of corruption and abuse of power (BBC news, 2010). And then, Thailand seems to be affected by the instability of the political scene. Moreover, in quarter two of 2008, the global economy experienced financial constraint which resulted from steep rises of the price of crude oil and consumer products, including food, also known as the “Hamburger Crisis” in the United States (Kongprasert, 2009). This could be the explanation of the decreasing of the SET index and total value trading around 2008 as shown in Figure 8 (3 and 4).

Figure 8: the total value trading and SET index (right axis) over periods

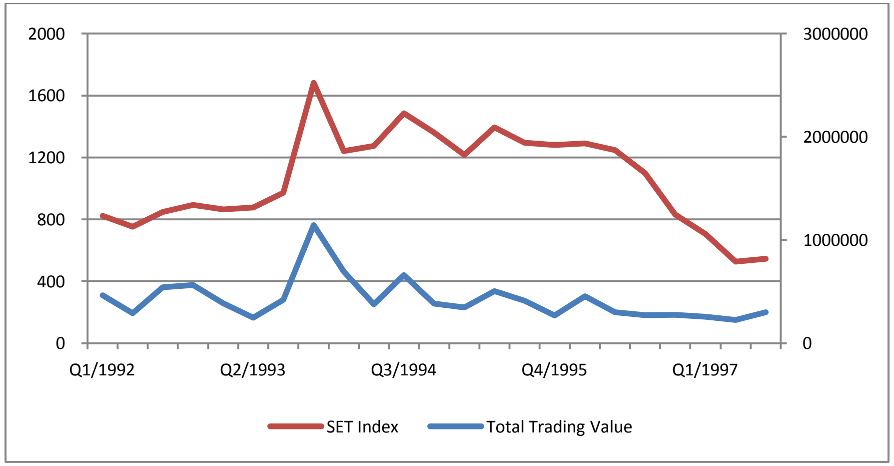
1:Q1/1992-Q4/2008



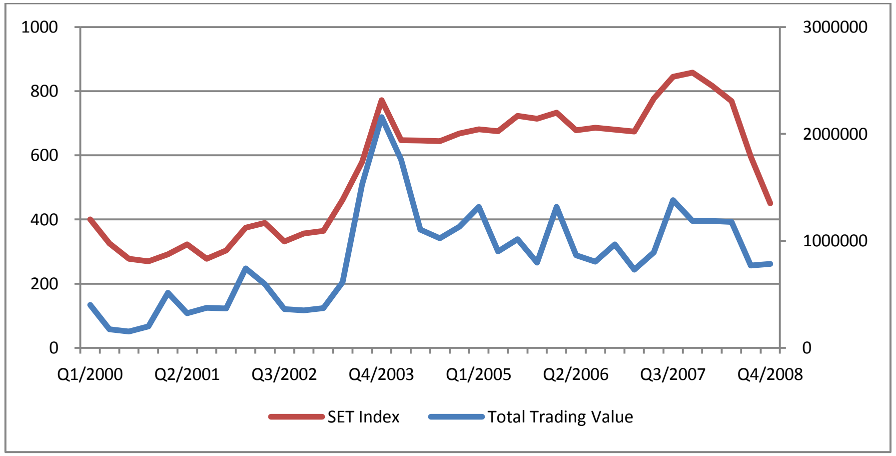
3:Q4/1997-Q4/2008



2:Q1/1992-Q3/1997



4:Q1/2000-Q4/2008



The Volatility of Foreign Investment and the Thai Stock Market

Table 8 shows the volatility of the Thai stock market and foreign investment in the Thai stock market in each periods; Q1/1992-Q3/1997, Q4/1997-Q4/2008 and Q1/2000-Q4/2008, using standard deviation and coefficient of variation. According to literature review, once financial liberalization has taken place stock market volatility will reduce.

First of all, the standard deviation of foreign investor total value trading and net value trading have increased after the Asian crisis liberalization and then had shrunk after the financial institution's recovery plan in 2000. The increasing of standard deviation of foreign investor's total value trading and net value trading would be the result of increasing the standard deviation in either foreign investor's selling or buying value. However, the standard deviation values would be difficult to compare since there have the difference mean, thus, this study applies the coefficient of variation in order to investigate and compare the variation after financial liberalization had been introduced. Nevertheless, the coefficient of variation, in this case, also showed a similar result as the standard deviation does, that the variation of foreign investment after the Asian crisis financial liberalization has been increasing and then slightly reduced after the financial institution's recovery in 2000. However, there is the interesting point that the coefficient of variation values of net foreign trading value after the Asian crisis is a relative high, 15.44 from 3.69 in before the Asian crisis period and even higher in after the financial institution's recovery plan period, 23.77. From this study, foreign investment in the Thai stock market has a higher volatility after financial liberalization.

Table 8: the valatility of foreign investment and stock market over time, between Q1/1992 – Q4/2008

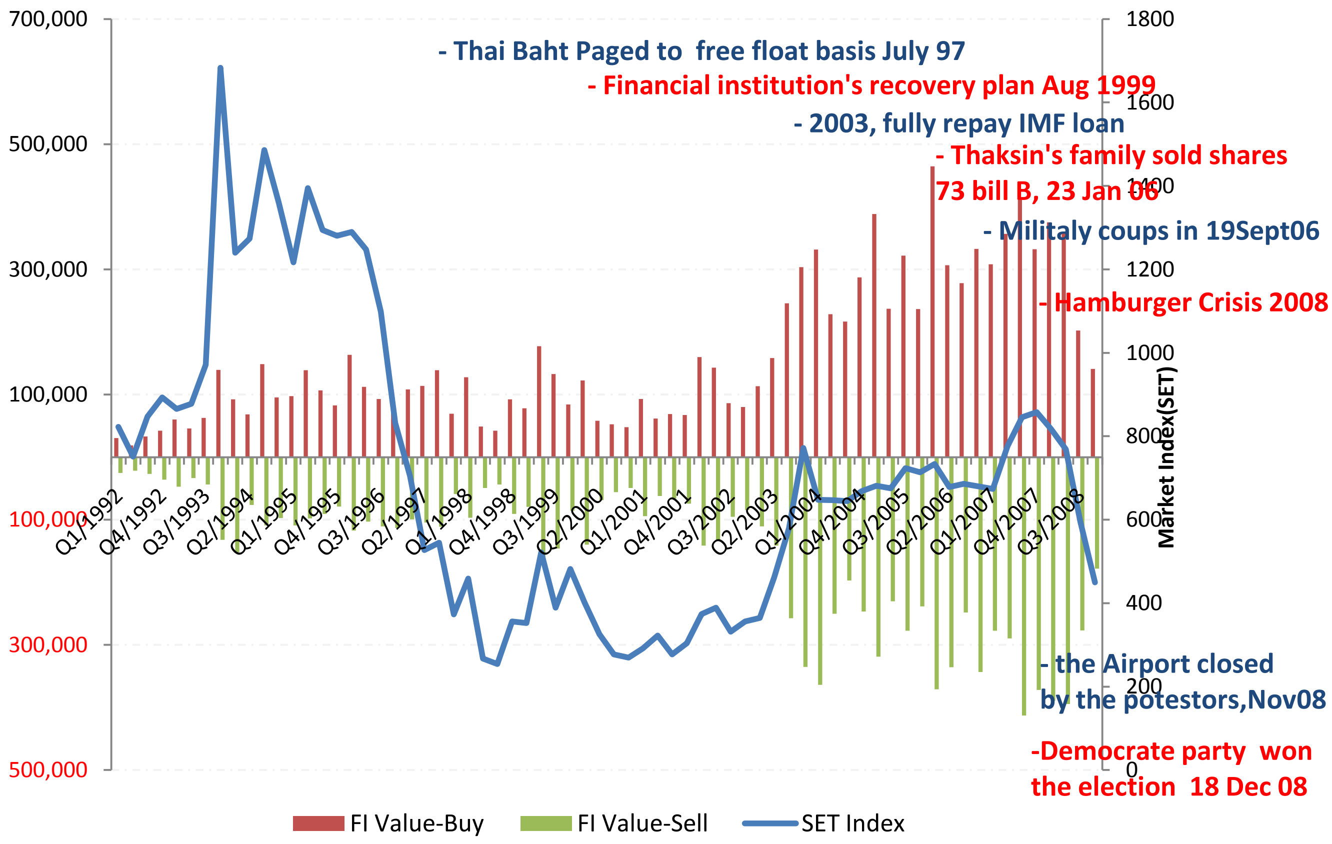
	Expected	Q1/92 - Q3/97		Q4/97-Q4/08		Q1/00-Q4/208	
	(+/-)	SD	CV	SD	CV	SD	CV
foreign investment							
- total value trading		75,016	0.43	236,752	0.61	235,243	0.53
- Net value trading		22,685	3.69	30,239	15.44	33,344	23.77
- buy value		40,469	0.45	121,206	0.62	121,354	0.55
- Sell value		37,858	0.45	117,439	0.60	116,184	0.53
Market Index	-	309	0.29	190	0.36	193	0.35
total value trading		204,113	0.48	477,051	0.65	465,157	0.55

As the market index, there has showed the lower standard deviation value after the Asian crisis financial liberalization, but the standard deviation value has slightly increased after the financial institution' recovery plan in 2000. However, the increasing of variation in stock market after financial liberalization would be the result of higher variation of net foreign investment and local investor's trading after financial liberalization. The explanation of higher coefficient of variation could be the result of the instability of Thai politics in 2006 and the Hamburger crisis in the U.S. in 2008. Also, in

2006, there was a large trading deal in the Stock Exchange of Thailand when Thaksin Chinawatra, the former prime minister, and his family sold their shares on 23 Jan 2006 (the Shin corp., Advance Info Service Pcl, and Thaicom Pcl.) to a Singapore company netting about 73 billion baht (about $1.88 billion). The seizing of Bangkok's airport, Suwannabhumi International Airport by the anti – Thaksin Chinawatra group The People's Alliance for Democracy (PAD), also can be cited as further explanation of the difficulties experienced in this period.

To conclude, financial liberalization has had an impact on foreign investment and stock market in terms of growth. This study reports that financial liberalization after the Asian crisis has increased foreign investment, especially, after the financial institution's recovery plan in late 1999. But the net value of foreign investment has decreased since the Asian crisis' financial liberalization. Speaking of stock market change due to financial liberalization, the SET index showed to be increasing over the time of this study, and also showed an increase of growth rate after financial liberalization. As volatility, the foreign investment in total trading (buying and selling) has shown a slight increase but has not significant changed after financial liberalization. But the volatility of net foreign investor trading has risen rapidly after the Asian crisis' financial liberalization in late 1997 and financial institution's recovery plan in 2000. As the volatility of Thai stock market after financial liberalization in 1997, and 2000 has shown a slight increase and then had fallen in late 1997 and 2000 respectively, as same as the total value trading. As mentioned, the growth and volatility of foreign investment and stock market is not influenced by financial liberalization only, but also by other factors. In Figure 9, there are several important issues in Thailand which would be seen as some of the factors in the growth and volatility of foreign investment in stock market and the Thai stock market.

Figure 9: the foregin buying- selling value in the SET and SET index (right axis) between Q1/1992 and Q4/2008, with the important issues in Thailand



Conclusion

In recent decades, many countries have recognized "financial liberalization" since increasing globalization has made the world smaller and competitiveness higher. Financial liberalization refers to the reduced barrier of money flow in a particular country, mainly through foreign investment which is believed to be one of the main economic drivers. The remarkable aspect of financial liberalization would be the integration of the European Union in terms of economic union and the agreement between countries over trade, also called 'Free Trade Area (FTA)' which has created the competitiveness and growth in agreement countries.

Historically, many countries have benefited from liberalizing their financial sector in terms of higher foreign investment and economic growth. The increase in investment, especially foreign investment, would be the result of the lower cost of investment, called cost of equity since the relaxation of regulations, deregulation and regulations that benefit investment. However, there are some arguments around the disadvantages of financial liberalization since it would create an unbalance in the economic system which leads to financial crisis. Apart from growth and volatility, financial liberalization would also impact in other aspects. As the structure change, the structure of companies would change after liberalization. Relaxation of market barriers and foreign owner limits would be the result of structural changes. Higher participation of foreign investment would lead to changes in structure in either company or economy. The relaxation of foreign owner limits would affect not only the structure but also business operation and corporate governance. Plus, financial liberalization would be one reason for the higher liquidity in stock market which would improve its operation for better market efficiency. Liquidity would be higher since the decreasing of entry and exit barriers in financial markets, deregulation, regulation and policy which mainly aims to encourage foreign investment, thus, this would make the flow of money move easier between countries. Levine (2001) has argued the role of financial liberalization, particularly international financial integration, which could encourage economic development. For instance, liberalizing restrictions on international portfolio flows tends to enhance stock market liquidity. Enhanced stock market liquidity accelerates economic growth primarily by boosting productivity growth. By allowing greater foreign bank presence tends to enhance the efficiency of the domestic banking system, in terms of better developed banks spur economic growth primarily by accelerating productivity growth (Levine, 2001). The evidence from the Shanghai stock market shows a positive and significant liquidity impact from financial liberalization which reflects not only an improvement in capital allocation efficiency in China's equity market from a financial stability point of view but also a reduction in its vulnerability (Lee & Wong, 2009)

Thailand has experienced financial liberalization since 1980. The significant change in current account and foreign exchange control would be the VIII Article agreement with IMF in 1990 concerning the restriction of current payment, trading, foreign currency control, and reserve assets. After that the Thai government have tried to promote Bangkok as the "financial hub in the region", thus, they established the Bangkok International Banking Facilities (BIBF) in 1993 providing an offshore financial market and operating a financial service in foreign currencies (taking money from aboard and lending in both domestic and international, in foreign currencies). As interest control, there were the cancellations of ceiling interest rate on deposit, lending, and borrowing interest rates which started from 1989 and finished the cancellation in 1993. As the stock market in 1992 the Securities Exchange Commission (SEC) Act has introduced to control and authorize the Stock Exchange of Thailand. And after that, there were many institutions that were created to increase the efficiency of the stock market. For instance, Thai Rating and Information Services (TRIS) in 1995 providing the rating of listed companies and financial instruments. However, the stock market not only developed for serving foreign investors' needs but also for domestic investors, for example, the increasing of trading system in 1991 "Automated System for the Stock Exchange of Thailand (ASSET)" and developed to "Advance Resilience Matching System (ARMS)" which would provide more efficiency, the electric clearing system in 1996, the internet trading in 2000. As for foreign investment foreign investment in Thailand has been controlled by the Foreign owned Business Act (FBA). Over a period of time, the Foreign Owned Business has been developing in order to attract investment from aboard and had been gradually liberalized in the period between 1991 and 1994. However, it is remarkable that Thailand has shown significant liberalization in the financial sector but the currency exchange basis was still fixed. This would be one reason for the Asian crisis in 1997, since the opening of the country while the Baht is fixed unbalanced the financial systems. The over investing and spending by the private investor had been increasing. In Feb 1996, the stock exchange of Thailand index rapidly shrank by over 50 percent from its peak because of the huge amount of capital outflow from foreign investors and the rumors of a floating of the Thai baht. Thailand could not bear this situation that long, thus, in July 1997, Thailand had to change its currency exchange basis to a freely float basis, and it became the starting point of the financial crisis in East-Asia. By that time, Thailand received assistance from the IMF with loans and restructure assistance. Thus, the Thai financial sector had been forced to implement financial liberalization. After that Thailand has been improving and developing its financial systems.

This study investigates the impact of financial liberalization on stock market and foreign investment in the stock exchange of Thailand, exploring the growth and volatility after financial liberalization was implemented. Financial liberalization data presented in this paper is after the Asian crisis, since there were significant changes in the financial system. However, using the crisis period as financial liberalization date would be biased by the situation of instability, by that time, because once the crisis has taken place the investor and the economy would drop as a general rule. Then, this study would add one more financial liberalization date; the financial institution's recovery plan - 14 August 1999, because there was a significant change in the financial system and the economics of Thailand had shown positive signs of recovery by that time. The study would apply administrative data from Stock Exchange of Thailand, SETSMART, as the data source, and then use the statistic to demonstrate the research question.

The results of this study indicate that the total foreign investment and stock market, SET index, has been increasing after financial liberalization, Asian crisis (Q3/1997) and financial institution's recovery plan (Q1/2000) but it showed the lower growth rate after financial liberalization, both Asian crisis's and financial institution's recovery plans. On the other hand, the net value trading has shown a decrease after financial liberalization during the Asian crisis. Speaking of volatility after financial liberalization, the stock market and foreign investment in Stock Exchange of Thailand has shown a slight increase in volatility after financial liberalization was implemented. But the net foreign trading showed a huge increase after the Asian crisis and much higher after the financial institution's recovery plan. The explanation of higher volatility probably is the instability of Thai politics and the international factor; the hamburger crisis.

To sum up, this study would conclude that financial liberalization would increase foreign investment in the stock market and the Thai stock market, SET index. Moreover, once financial liberalization was implemented the volatility of the Thai stock market and foreign investment in stock market would increase. The volatility of the stock market has not shown a significant change over the period of this research. Consequently, these results would be remarkable in that foreign investors in the Stock Exchange of Thailand are still the speculative investor or short term investor. The higher volatility of stock market would be one price of the openness market, which Thai stock market has to pay.

Nevertheless, these data must be interpreted with caution because this study had ignored the others factors; international factors, political factors and social factors, plus, the limitation of available data. Especially, after 2006 which was the large deal in the SET by the Thaksin's family. It also must be noted there are continuing political problems (2010) leading to lower confidence of investment in the country. The increasing of financial liberalization in Thailand would be seen to have a significant advantage in the increasing of foreign investment. Theorists believe that increasing of financial liberalization may increase investment and economic growth in the long term. But in the real world Thailand has paid the price for financial liberalization, for instance, the Asian crisis, which can be blamed on the unbalance of liberalization. Moreover, there would be an indirect price that Thailand has to pay, for instance, structure change, and ownership by Thai people. Regarding ownership by Thai nationals; even though there are limitations of foreign shareholders in Thai companies there are several ways for foreign investors to take over Thai companies. For example, holding stock through nominees, and holding stock through limited corporations.

Speaking of foreign investor, foreigner paid intention to Thai stock market since the lower regulation and deregulation of investment. Moreover, as the second large players in the Thai stock market will probably affect the Thai stock market. Apparently, there are about half of total stock value that are held by owners. Therefore, there would be about 3.3 trillion baht (over half) for free-float stock which about 57% of the free-float stock was held by foreign investors (November, 2009). Generally, foreign investors in the Thai stock market aim only for capital gains from trading. Then, the problem of the Thai stock market is whether these foreign investments move all or majority of their money to another market which would impact greatly on the Thai stock market. Or even, these foreign investors would like to take over the company, although one would say that foreign investors aim only for capital gain in the market rather than the controlling rights in the company.

Moreover, the regulations of foreign owner in Thai company still have some avoidance. According to the foreign limited ownership law there are two types of stock, these are common stock and preferred stock, thus, the company would let the foreign investor hold the majority of common stock than preferred stock in order to control power in the company. Moreover, regarding the issue of nominee this proscription is hardly surprising in concept, it is also highly abstract. Thus, the changing of liberalization would affect the Thai stock market in several ways, for instance, the higher number of foreign investors in the market, or even the higher volatility of foreign investment which would affect the market with the high lot of trading.

Overtime, the Thai stock market tends to change related to foreign investment which, in my point of view, it would be seen as a vulnerable situation. In the opinion of this author the Thai stock market is still concentrated in a small group of Thai investors, and many regulations serve for foreign investors' needs rather than the needs of the Thai investor. There are some barriers for Thais, in order to investment in stock market; for example, the initial cost of entry, the channel of trading, and available information. Thus, for further research would be the relationship and impact of foreign investment on the Thai stock market, to investigate the impact of foreign investment in Thai stock on the Thai stock market if the Thai stock market is influenced by Thais or foreigners. The participation of Thai people in the Thai stock market still is a small percent; given that there was high growth after internet trading has been allowed. These would be the big issues for related policy makers to promote the Thai stock market to Thai nationals to make the Stock Exchange of Thailand ownership of Thai people.

Bibliography

Abiad, A., Oomes, N., & Ueda, K. (2005). The Quality Effect: Does Financial Liberalization Improve the Allocation of Capital? *Sixth Jacques Polak Annual Research Conference* (pp. 1-47). Washington: International Monetary Fund.

Ahmed, A. D., & Islam, S. M. (2009). *Financial Liberalization in Developing Countries.* Melbourne, Australia: A Springer Company.

Alba, P., Hernandez, L., & Klingebiel, D. (2000). Financial Liberalization and the Capital Account: Thailand 1988–1997.

Ariff, M., & Khalid, A. M. (2005). *Liberalization and Growth in Asia:21st Century Challenges.* Cheltenham, UK & Northampton, MA, USA: Edward Elgar Publishing.

Bank of Thailand. (2006). *Thailand's Financial Sector Master Plan Handbook.* Bangkok: Bank of Thailand.

BBC news. (2010, February 26). Retrieved April 2010, 10, from BBC news website: http://news.bbc.co.uk/1/hi/world/asia-pacific/1108114.stm

Bennett, S., & Savage, R. (2006). Foreign ownership restrictions in Thailand. *Asiamoney , Vol. 17*, p34-35.

Black, T., & Black, S. (1993). Reform of the Global Financial Architecture: Lesson from Thailand. *Agenda , 6*, 261-270.

Cajueiro, D. O., Gogas, P., & Tabak, B. M. (2009). Does financial market liberalization increase the degree of market efficiency? The case of the Athens stock exchange. *International Review of Financial Analysis 18* , 50–57.

Chen, S.-S., Chou, R. K., & Chou, S.-F. (2009). The Impact of Investment Opportunities and Free Cash Flow on Financial Liberalization:A Cross-Firm Analysis of Emerging Economies. *Financial Management* , 543 - 566.

Clouse, T. (2008, February). Securities Markets Become More Open:China. *Global Finance* .

Edwards, S., Biscarri, J. G., & Gracia, F. P. (2003). Stock market cycles, financial liberalization and volatility. *Journal of International Money and Finance , 22*, 925–955.

Henry, P. B. (2000). Do Stock Market Liberalizations Cause Investment Booms? *Forthcoming, Journal of Financial Economics* , 1-53.

Henry, P. B. (1999). Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices. *Forthcoming, Journal of Finance* , 1-32.

Horng, W.-J., & Hsu, L.-H. (2007). An Impact of Foreign Investment Turnover and Exchange Rate Volatilities on the Taiwan's Stock Market Returns: A Double Threshold-IGARCH Model.

Huang, B.-N., & Yang, C.-W. (2000). The Impact of Financial Liberalization on Stock Price Volatility in Emerging Markets. *Journal of Comparative Economics 28* , 321–339.

IMF. (2000, January). *Recovery from the Asian Crisis and the Role of the IMF.* Retrieved April 20, 2010, from IMF website : http://www.imf.org/external/np/exr/ib/2000/062300.htm#VI

International Economics. (2000). (The Chinese University of Hong Kong) Retrieved March 13, 2010, from International Economics-Historial Exchange Rate Regime of Asian Countries: http://intl.econ.cuhk.edu.hk/exchange_rate_regime/index.php?cid=2

Kaminsky, G. L., & Schmukler, S. L. (2001). *On Booms and Crashes:Financial Liberalization and Stock Market Cycles.* Washington, DC.

Kassimatis, K. (2002). Financial liberalization and stock market volatility in selected developing countries. *Applied Financial Economics* , 389-394.

Kishi, M. (1996). Regulation Issues in the Era of Financial Liberalization: Janpan, Korea and Taiwan. *Journal of Asian Economics , 7* (3), 487-502.

Kongprasert, T. (2009). *Thailand and the Hamburger Crisis.* Bangkok: Thai World Affairs Center.

Lee, J., & Wong, A. (2009). *IMPACT OF FINANCIAL LIBERALISATION ON STOCK MARKET LIQUIDITY: EXPERIENCE OF CHINA.* Hong Kong: Hong Kong Monetary Authority.

Levine, R. (2001). International Financial Liberalization and Economic Growth. *Review of International Economics , 9* (4), 688–702.

Menkhoff, L., & Suwanaporn, C. (2007, January). 10 Years after the Crisis: Thailand's Financial System Reform. *Discussion Paper 356* , 1-24.

Petprasert, N. (2000, June). The crisis of the Thai economy and the IMF. *Reformed World: Globalization and its consequences , 50* (2).

SEC. (2004). *the First Decade of SEC in Thai Capital Market.* Thailand: SECURITIES AND EXCHANGE COMMISSION.

Singh, A. (1997). Financial Liberalization, Stock Markets And Economic Development. *The Economic Joumai* , 771-782.

Stock Exchange of Thailand. (n.d.). Retrieved June 26, 2009, from Stock Exchange of Thailand Web site: http://www.set.or.th

Stock Exchange of Thailand. (2009). *Capital Market Development Masterplan.* Bangkok: Stock Exchange of Thailand.

Sussangkarn, C. (2000). *Economic Crisis and Recovery in Thailand: The Role of the IMF.* Bangkok: Thailand Development Research Institute (TDRI).

Tai, C.-S. (2007). Market integration and contagion: Evidence from Asian emerging stock and foreign exchange markets. *Emerging Markets Review 8* , 264–283.

Tong, L. C. (2005). Does Stock Market Liberalization Benefit The Economy?: Evidence From Industry-Level Data. *SCAPE Working Papaer Series* (16), 1-33.

Vichyanond, P. (2007). *Crucial Transitions in Thailand's Financial System After the 1997 Crisis.* Bangkok: Thailand Development Research Institute.

Way, C. R. (2005). Political Insecurity and the Diffusion of Financial Market Regulation. *The ANNALS of the American Academy of Political and Social Science* , 125-144.

Witchayanon, P. (2000). *Financial Reforms in Thailand;Macroeconomic Policy Program.* Bangkok: Thailand Development Research Institute.

Appendix

1. Arithmetic Mean

		Mean	
Investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
buy value trading			
- Local Investors	23543.441	43059.124	50953.3563
- Proprietary Trading	57326.584	28906.328	35268.3325
- Foreign Investors	90412.81	196161.97	221521.415
- Local Institutes	254306.85	464227.1	535027.198
Sell value trading			
- Local Investors	22760.225	42594.44	50348.9282
- Proprietary Trading	58730.589	29121.919	35313.0837
- Foreign Investors	84262.5	194204.07	220118.427
- Local Institutes	259836.41	466434.08	536989.863
- total value trading	425589.68	732354.52	842770.302
Market Index	1065.300	522.552	557.247

Total value trading	**Mean**		
Investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	46303.666	85653.565	101302.284
- Proprietary Trading	116057.172	58028.247	70581.416
- Foreign Investors	174675.310	390366.038	441639.843
- Local Investors	514143.260	930661.180	1072017.061

Net value trading	**Mean**		
Investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Investors	-5529.560	-2206.987	-1962.665
- Proprietary Trading	-1404.005	-215.591	-44.751
- Foreign Investors	6150.310	1957.894	1402.988
- Local Institutes	783.216	464.684	604.428

% of total value (buy)	**Mean**		
investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	5.70%	5.54%	5.88%
- Proprietary Trading	11.85%	4.26%	4.04%
- Foreign Investors	24.23%	27.85%	26.30%
- Local Investors	58.22%	62.34%	63.78%
% of total value (sell)	**Mean**		
investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	5.8%	5.4%	5.8%
- Proprietary Trading	12.2%	3.3%	4.0%
- Foreign Investors	22.7%	28.4%	26.1%
- Local Investors	59.2%	62.9%	64.1%

%change of total value	Mean		
Investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	10.06%	13.30%	11.41%
- Proprietary Trading	4.91%	14.96%	15.18%
- Foreign Investors	13.95%	8.93%	7.94%
- Local Investors	10.48%	19.65%	13.46%
% change of Market Index	-0.17%	1.24%	0.70%

%change of Net value	Mean		
Investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	-89.48%	-41.04%	-52.38%
- Proprietary Trading	-59.50%	666.27%	843.22%
- Foreign Investors	37.92%	132.03%	148.75%
- Local Investors	-172.42%	-1222.06%	-1499.09%

Standard variation

total value trading	SD		
investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	23621.01	63824.32	61880.38
- Proprietary Trading	134288.5	66184.66	68511.05
- Foreign Investors	75015.97	236752.1	235242.6
- Local Investors	273856.4	674063.4	673267.5
Index(1)	308.745	190.239	193.3894

Net value trading	SD		
	Q1/1992 - Q3/1997	Q4/1997-Q4/2008	Q1/2000-Q4/2008
- Local Investors	19115.58	20355.28	22093.98
- Proprietary Trading	1432.558	994.942	857.9612
- Foreign Investors	22685.15	30239.17	33343.54
- Local Institutes	7613.122	11579.36	12930.07

	SD		
buy value trading	Q1/1992 - Q3/1997	Q4/1997-Q4/2008	Q1/2000-Q4/2008
- Local Investors	13235.98	32523.02	31642.89
- Proprietary Trading	67050.85	33149.42	34243.04
- Foreign Investors	40469.28	121206.3	121354.1
- Local Institutes	134557.7	337103.8	336563.3
Sell value trading			
- Local Investors	11522.36	32342.94	31573.9
- Proprietary Trading	67245.2	33042.63	34273.37
- Foreign Investors	37858.2	117439.3	116183.6
- Local Institutes	139912.8	337266.9	337066.4
total value trading	204113.5	477051.2	465156.7

total value trading	coefficient variation

investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Institutes	0.510	0.745	0.611
- Proprietary Trading	1.157	1.141	0.971
- Foreign Investors	0.429	0.606	0.533
- Local Investors	0.533	0.724	0.628
Index(1)	0.290	0.364	0.347

Net value trading	**coefficient variation**		
investor group	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Investors	3.457	9.223	-1.257
- Proprietary Trading	1.020	4.615	19.172
- Foreign Investors	3.688	15.445	23.766
- Local Institutes	9.720	24.919	21.392

	coefficient variation		
buy value trading	**Q1/1992 - Q3/1997**	**Q4/1997-Q4/2008**	**Q1/2000-Q4/2008**
- Local Investors	0.562	0.755	0.621
- Proprietary Trading	1.170	1.147	0.971
- Foreign Investors	0.448	0.618	0.548
- Local Institutes	0.529	0.726	0.629
Sell value trading			
- Local Investors	0.506	0.759	0.627
- Proprietary Trading	1.145	1.135	0.971
- Foreign Investors	0.449	0.605	0.528
- Local Institutes	0.538	0.723	0.628
total value trading	0.480	0.651	0.552