FINANCIAL SYSTEM DEVELOPMENT AND ECONOMIC PERFORMANCE IN MALAYSIA: THE ROLE OF LIBERALIZATION

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A research project submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF FINANCE (HONS)

FACULTY OF BUSINESS AND FINANCE

DEPARTMENT OF FINANCE

APRIL 2016

DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
(3) Equal contribution has been made by each group member in completing the research project.
(4) The word count of this research report is 27,022.

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Date: 21st April 2016

ACKNOWLEDGEMENTS

First of all, we would like to express our utmost appreciation to our research supervisor, Professor Dr Choong Chee Keong, who has been genuinely supportive on our research. He is exceptionally generous in sharing his extensive knowledge in the field of finance and economic which provided us invaluable opinions that improve the quality of this research paper. Prof. Choong never fails to meet us up for discussion despite his packed schedule and we are grateful for his admirable sense of responsibility. The completion of this paper is not possible without his guidance, encouragement, patience, motivation, enthusiasm, and immense knowledge.

Moreover, we would also like to extend our special thanks to our second examiner, Dr. Ahmad Nazri Wahidudin for his advices in aiding us to polish our research project. He is very sincere in providing us different point of view during our presentation. Lastly, we would also like to offer our regards to Mr Steven Ng, for helping us in the methodology for our research. He has provided us different perspectives on our research that are very useful in conducting the test. We are grateful for his information, suggestions and advices in assisting for our research project.

Besides, we are thankful to have this opportunity to carry out research on important issues faced by our beloved nation. This undergraduate project also helps us to brush up our critical thinking and analytical skills. On top of that, we are appreciated for all the efforts contributed by every team member and the tremendous stress endured together.

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AANZFTA	Asean-Australia-New Zealand Free Trade Agreements
AFTA	Asean Free Trade Agreements
BNM	Bank Negara Malaysia
CRED	Private Credit
FSMP	Financial Sector Masterplan
FTAs	Free Trade Agreements
GDP	Growth Domestic Production per capita
GOV	Government Consumption
INF	Inflation
POP	Population Growth
R&D	Research and Development
SSA	Sub-Saharan Africa
TRAD	Trade Openness
WTO	World Trade Organization

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ABSTRACT

This study examines the relationship between financial liberalization and economic growth in Malaysia. It tends to know the contributions of the liberalization in the Malaysian economy and whether the financial system development has been able to achieve its main objective of liberalization. It also seeks to show whether the achievement will continue to increase the development of the economy. The capital account and equity market liberalization are the main purpose of the study and to seek the relationship of both types of liberalization towards the economic performance in Malaysia with the financial system development as the linkage. The financial liberalization of Malaysia was proxied by ratio of government consumption to GDP, trade openness, inflation, population growth, and private credit to GDP while the economic growth was measured by the real capita per GDP. The Vector Error Correction Model was employed, which was conducted after ensuring the stationarity and existence of cointegration of the variables through the Unit Root Test and Bound test. The study indicates that the cointegration test showed that long run equilibrium conditions are only maintained between the variables when all the exogenous variables are used together. We employed the Generalized Method of Moments (GMM) to estimate the relationship of liberalization towards economic growth. It also shows that all the variables are statistically significant. We show that equity market liberalizations, on average, increase by 0.21% of the GDP. We find that capital account liberalization also plays a role in future economic growth, but, importantly, it does not subsume the contribution of equity market liberalizations. In order to consolidate the gains of the reform programme, government should avoid drastic policy reversal but rather, it should concentrate efforts in fine-tuning the existing policy measures. Creating and maintaining a stable macro-financial environment based on stable macroeconomic policies, low inflation and flexible interest rates.

CHAPTER 1: INTRODUCTION

1.0 Introduction

Since the act of the new theories which is derived internally of the economic growth, there has been an acceptance of interest in the possible functions performed by financial development in the process of economic development. A great significance question in the literature is whether the financial liberalization influences economic growth, in the long run. Due to this, there were many empirical studies explicitly stated the role of finance on growth is already a conventionalized truth. Thus, how financial repression influences financial development and its connection on the economic growth have not been competently addressed in the literature. In this study, we make an argument derived from the results of how the role of financial liberalization with the financial system development gives impact on economic performance in Malaysia from the year of 1970 to 2014.

1.1 Research Background

In this developing world, Malaysia is well-known as a great and success development story. Prior to the financial crisis in year 1997-98, Malaysia's economic performance has been improved where the growth rates of GDP is higher in the late 1980. The effect of the financial crisis was being experienced in the real sector as support by evidence of business closures, reducing the leading of the high unemployment, and raising the inflation levels. The financial crisis influences

economic growth being slowdown which has had an unavoidable impact on Malaysia social. This achievement is due to the capital inflow from foreign investors with a high rate of return. This situation is seems to be 'Asian economic miracle'. Why would this happen? This dramatic economic transformation is due to the open trade policy. In past decade, the barriers of trade and investment in Malaysia is said to be low compared to other countries in the region. With this situation, Malaysia has gained the opportunity to expand the world trade. As government relaxes on the restrictions of market, the capital account liberalization is a result of the trade liberalization and globalization. Economists have suggested that an unrestricted international capital flow can actually provide efficient allocation of resources, improvement for financial development and also opportunity for reduction of risk. The liberalization of Malaysia started in the year of 1970 until now. Over the past decade, in conjunction to these potential advantages, most of the industrial countries are undertaking the capital account liberalization. The foreign investors around the world are able to do investment in other countries where it actually boosts up the economic performance by enhancing the competitiveness globally. There is no boundary in the circulation of products and services between different countries and indirectly it benefits the country by increasing the transaction of money and allows the capital market to turn well. As a result, the trade barriers have been eliminated, and do not impose the taxes. Moreover, the liberalized market allows the capital to free flow. What is more, the firms or corporations are benefited by gaining the external investment, along with the individuals, they can explore to more goods and services.

Equity market liberalizations public the indigenous stock markets to nation investors at where the government reduces the financing constraints of the country. It can be known as the stock market liberalization that the country's government will determine the permission for foreign investors to acquire the shares or stocks in association listed on Bursa Malaysia. There was the theory predicted that the higher rates of return to capital in the developing countries or emerging markets will

definitely attract the foreign capital to invest for the country that had liberalized. The influences of liberalization works through a diminished in the cost of capital which is real interest rates drop and indirectly decrease the systematic risk as the suitable achievement for the changes in price risk from the local market index to a world market index. As such, it would decrease the cost of equity capital and at the same time enhance the investment. With the implementation of equity market liberalization, the foreign investors have more opportunity to invest in the domestic equity securities and the domestic investors gain the right to transact in the foreign equity securities. In short, equity market liberalization would decrease the cost for internal and external financing.

In Malaysia, there is two types of 10 year masterplans which used by Bank Negara Malaysia in the financial sector development. The masterplans are Financial Sector Masterplan (FSMP) and also the Financial Sector Blueprint (Blueprint) which are used in the process of financial development in order to help and provide a balanced foundation and also a sustainable growth in economics of Malaysia. The FSMP was started in the period of 2001-2010 in providing the basic of financial sector development, building and developing the institutional capacity for the domestic intermediaries and financial infrastructure. On the other hand, the second masterplan of Blueprint was implemented for the period of 2011-2020. This Blueprint was built on the achievements of FSMP in order to enhance Malaysian economy reaching a high value-added and also a high income country. Moreover, it serves as a role to meet the growth of financial needs in emerging Asia.

According to Bank Negara Malaysia, the Blueprint is focused on the effectiveness of Malaysian economy, developing a dynamic financial market, strengthening and safeguarding the international integration and also the financial stability of financial system. It also wants to enhance the confidence of consumers by empowering them with the talented development of the financial sector. Thus, the

question comes where and how can the financial system to function effectively and efficiently to help the economy in Malaysia. As we know, the financial sector is gradually grows beyond and above its role as a key driver of economic growth. How the financial system can lends a hand in improving the effectiveness of financial liberalization towards the economic growth is always the question where the nation is searching for the answers. Plus, according to Bank Negara Malaysia, the financial sector is expected to contribute a growth of 10% or 12% to the nominal GDP by the year 2020. Therefore, it acknowledges that a stable, strong and competitive financial system may help in the flows of funds and also the development of financial market. Ang & McKibbin (2007) stated that a country with wealthier economies would have more demand in the financial services and greater ability in a costly financial system. Instead, when there is greater demand for the financial services, financial development would follow economic growth. To put it laconically, the increases demand for financial services would probably due to the growth in economy that causes more financial institutions, financial products and services to emerge in the markets.

1.1.1 Economic Liberalization

Malaysia Prime Minister, Najib Rajak stated that the world was transforming in a fast lane and thus the resident must get prepared to adapt the changes or the uncertainty to avoid being left behind. Thus, Malaysia has implemented some measures such as modification of preferences that designed to benefit the ethnic Malays in order to increase or maintain the foreign investment. This moderation allows the foreign investors to invest in majority of the stakes in most companies but not the “strategic” industries such as the banking sector, utilities, easing the insurance regulation, curtailing powers of the Foreign Investment Committee and telecommunications.

Moreover, the minimum quota for Malays ownership in the public listed companies had been reduced from 30 percent to 12.5 percent. The Goldman Sachs and Citigroup which is the American banking firms had been granted the permission to further their subsidiaries in Malaysia after the implementation of these reforms. Goldman Sachs has been received the licenses to set up advisory operations and fund management, while Citigroup had obtained the permit to offer brokerage services in Malaysia. These approval and acceptance of foreign company to set up in Malaysia is seems to be the shark break of Malaysia's history which has a strictly regulated markets and domestically dominated in the financial services. To protect the exporters from hurt with these reforms, our Prime Minister, Najib Rajak had planned for the central bank to appreciate the ringgit and also allow the borrowing or settlement which denominated in ringgit.

1.1.2 Reform of Government Subsidies

To strengthen the finances of government and improve the economic efficiency, Malaysia's Prime Minister Najib has implemented the subsidy reform in July 2010 through a reduction of fuel and sugar subsidies. Najib has cut the subsidies for petrol, diesel and Liquefied petroleum gas, LPG on 16 July 2010 in order to meet the 10th Malaysia Plan and the New Economic Model. The subsidy of RON97, a premium grade of petrol was withdrawn by government at the start of 2014. In addition, to protect the rural poor in Sabah and Sarawak, Najib stressed the government to standardize the prices of fuels. Although these measures would give little negative impacts on most citizens, but government would save around RM750 million by the end of 2010. Due to the reason that the disproportionately give advantage the foreigners and also the wealthy, thus sugar and fuel is selected to cut down the subsidies. Plus, Najib mentioned that the over-consumption of the sugar and

fuel, and create opportunities for smuggling and fraud were also the facts that they chose these commodities to be reforms. What is more, the reforms were also due to the hope of Prime Minister that wants to adopt a healthy lifestyle for the Malaysians by reducing the consumptions of sugar which may endanger the people's health. However, our Prime Minister's Office mentioned that they would still giving the subsidies which cost around RM7.82 billion per year on fuel and sugar in order to take care for the poor citizens. They promised the commodities' prices would remain at the lowest in the Southeast Asia. The education and also the health care will be continued to receive the state support where the government had promised. On 1 December 2014, the government saved around RM20 billion ringgit (US$5.97 billion) annually with the implementation of ended the subsidy of all fuels and taking benefits of low oil prices at the time. The prices will be adjusted through the market rate with the managed float mechanism.

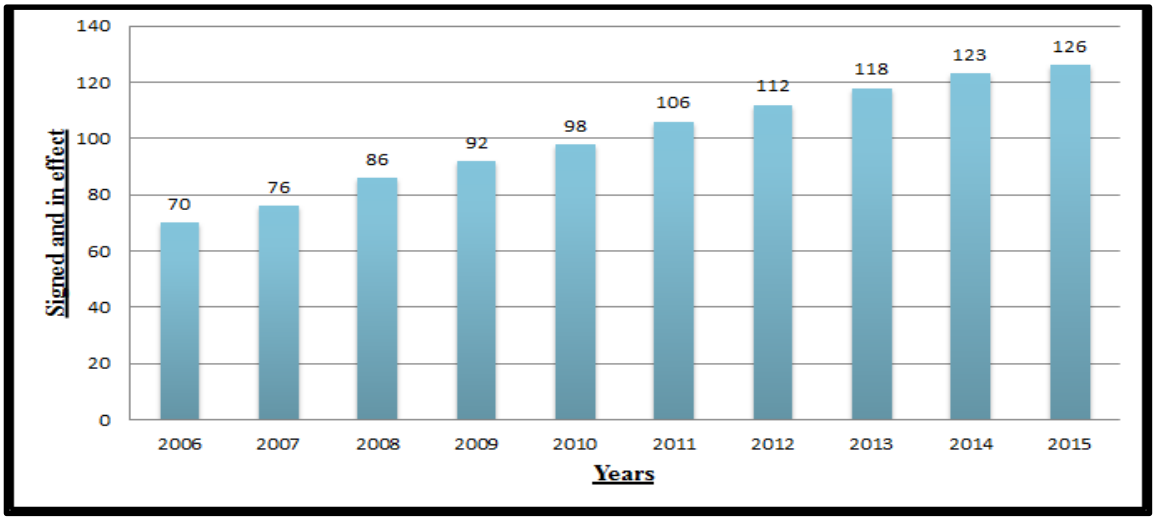
1.1.3 Free Trade Agreements (FTAs)

Malaysia's economic growth and financial development are generously desirable with the free trade policy. Malaysia implemented the additional of liberalization on trade with the environment that provides fair international trade according to the trade policy. Malaysia continuously involved in the regional and bilateral trading arrangements in order to complement the multilateral process for the liberalization of trade even though Malaysia is going to achieve the high priority for the rule-based multilateral trading system which is provided by World Trade Organization (WTO). FTAs focuses more to supply the methods or procedures which needed to achieve the rapid and top levels in the liberalization which would give impact to the effectiveness of market access among the FTAs' participants. FTAs consists the restriction on the goods and services trade and also the investment area.

Prime Minister, Najib had competitively encouraged free trade for our country and the government had carried out three FTAs which included the Asean FTA (AFTA), Asean-India FTA in goods and Asean-Australia-New Zealand FTA (AANZFTA). In order to eliminate or reduce the tariffs on thousands of industrial and agricultural goods, Malaysia had entered into FTAs with New Zealand on 26 October 2009 which had taken effect on 1 August 2010. Both countries promised to correspond Most Favored Nation status in information technology, engineering services, personal education, environmental protection and mining services.

According to Figure 1.1, it shows the provisions of FTAs come into forces after legislative or executive ratification. Malaysian must pay strict attention to these primary laws, heedless of whether government has approved the suitable conferences and in spite of whether any FTAs comes upon the stage to put into these engagement. Figure 1 showed that as year goes longer, the FTAs with signed and in effect resulted the consistent growth from 70 - 126 from the year 2006 to 2015. That's means the increasing of FTAs as the country moves forward to the future.

Figure 1.1: Free Trade Agreements

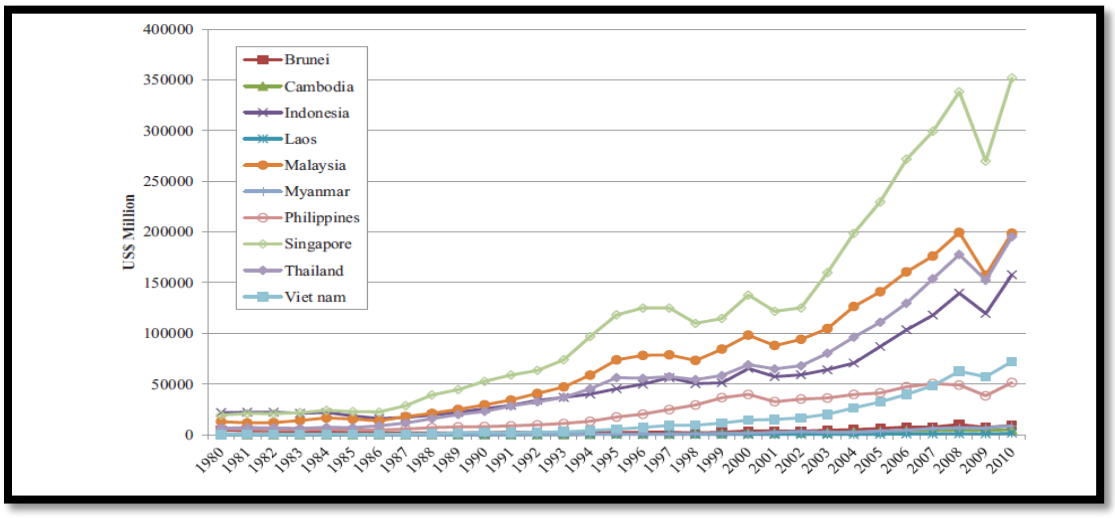


Source: ADB's FTA Database

1.1.3.1 Asean FTA (AFTA)

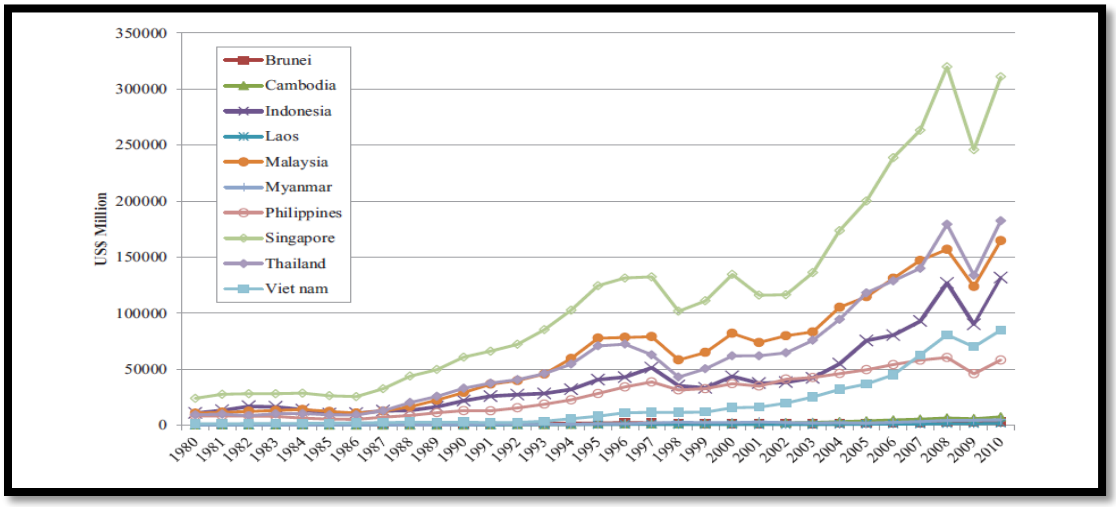
AFTA is a trade bloc agreement by the Association of Southeast Asian Nations supporting local manufacturing in all ASEAN countries. AFTA agreement was signed on 28 January 1992 in Singapore. On 28 January 1992, the main legal basis to implement AFTA is the Common Effective Preferential Tariff (CEPT) Agreement signed by ASEAN Economic Ministers. On 1 January 1993, the AFTA agreement was officially started with time frame of 10 years however initially is 15 years. The primary goals or objectives of AFTA are to increase ASEAN's competitiveness as a production base geared for the world market and to attract more foreign investment into ASEAN. The AFTA can benefit both ASEAN companies and consumers. ASEAN companies can be benefit by being able to import production inputs from other ASEAN countries at lower costs and to export to other ASEAN countries at lower tariffs and less trade barriers. ASEAN consumers can get advantage to have more choice of products and can consume at lower prices. From the Figure 1.2 and Figure 1.3, the exports and imports for Malaysia had increased from 1980 to 2010 with the AFTA.

Figure 1.2: ASEAN Exports to World



Source: WTO database, 2014

Figure 1.3: ASEAN Imports from World



Source: WTO database, 2014

1.1.3.2 Asean-Australia-New Zealand FTA (AANZFTA)

Asean-Australia-New Zealand FTA (AANZFTA) is the first Free Trade Agreement Australia has signed since the beginning of the global financial crisis. The countries of ASEAN which included Malaysia had established one of the most dynamic economic regions in the world. Before this, Australia and New Zealand have not been involved jointly in negotiating a FTA with third countries so this can considered as their first time to do so. Besides, it is also the first time for ASEAN started to have FTA negotiations covering all sectors including goods, services, investment and intellectual property simultaneously. Thus, AANZFTA is the most comprehensive trade agreement that ASEAN has ever negotiated. Furthermore, AANZFTA have brought benefits for Australian exporters and investors. The benefits are extensive tariff reduction and elimination commitments; Australian exporters will get new opportunities from regional rules of origin to tap into international supply chains in the region; Australian service suppliers and investors will get greater certainty; a platform for on-going economic engagement with ASEAN are being

provided through a variety of built-in agendas, business outreach activities and economic cooperation projects.

1.1.3.3 ASEAN-India Free Trade Area (AIFTA)

The ASEAN-India Free Trade Area (AIFTA) is referred to a free trade region including of the ten member states of the Association of Southeast Asian Nations (ASEAN) and India. The ASEAN-India Free Trade Agreement will gain the access for the members of trade bloc to enter the Indian market for processed and semi-processed agricultural products and close substitutes, which could adversely influence the agricultural sector of the country. On 8 October 2003, the initial framework agreement, the Comprehensive Economic Cooperation Agreement (CECA) was signed in Bali, Indonesia. It is expected to provide an institutional framework that would allow economic cooperation to come into effect. Meanwhile, after six years of negotiation, the final agreement was signed on 13 August 2009 in Bangkok, Thailand. However, the agreement did not consist of the information technology and software technology. It was only available for trade-in-goods. On 1 January 2010, the free trade area came into effect with regard to Thailand, Singapore and Malaysia.

1.1.4 Capital Flows

The capital inflows may give advantages to the country such as smooth consumption, needed investment, expand economic development and diversify the risks. Private capital flows consist of net foreign direct investment (FDI) and portfolio

investment. FDI is net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an economy other than that of the investor. It is the total of equity capital, reinvestment of earnings, long-term and short-term capital which inside the balance of payments (BOP). To recover from crisis, Malaysia has had to resort to external borrowing for financing, but this has been a costly method which may downgrade Malaysia's sovereign rating. Figure 1.6 showed the FDI in Malaysia. Malaysia achieved a lowest FDI in 2015Q4 which is RM 4700 million; while achieved the highest in 2016Q1 of RM 12500 million.

Figure 1.4: Malaysia Foreign Direct Investment

Source: www.tradingeconomics.com

1.1.5 Stimulus Package

The stimulus package is valued to be about 1 percent of Malaysia's GDP. It will make funding for some fundamental facilities and systems projects, which included the building of low and medium-cost residences, improving living quarters,

police stations, and army camps, retaining public amenities such as hospitals, building and maintaining roads in school and rural areas. Malaysian government had expectation about the raising funds into these plans will give impact on the economic. They had completed two stimulus packages to diminish the declining condition that happened to the global economic. In 4 November 2008, there was about RM7 billion worth for the first stimulus package was reported; and about RM60 billion worth for the second stimulus package was reported on 10 March 2009. Since presuming office as Prime Minister, Najib had been operating the weekly stimulus packages progression basis, Malaysian economists had confidences on the stimulus packages which spent on the construction area will successfully made economic activity to grow. Malaysia's central bank, Bank Negara Malaysia had reported that the economy of Malaysia had been increased at 9.5% annually during the first two quarters of year 2010. Prime Minister conveyed that the nation is on track to hit the 6% average annual growth to achieve the target to be a developed country by the year 2020. However, there was no plans from government to further the economic stimulus in August 2010. This was because the government would like to focus on maintaining Malaysia's economic foundational and expanding investment in order to prevent promoting stimulus packages regularly. In addition to that, it raised the shortage for country with every time the stimulus package was developed. Thus, stimulus package cannot be developed in a continuous basis.

1.2 Problem Statement

Recently, the financial or economic performances in developing countries have gained considerable attention from all over the world. Many researchers have been carried out the research to investigate whether there is positive or negative effect of financial liberalization on economic growth. Will financial liberalization spur

economic growth in developing countries? The answer is ambiguous because some are saying "yes" and some are saying "no".

Based on the study of Bumann, Hermes and Lensink (2013); and Bonfiglioli (2005) their findings showed a positive relationship between financial liberalization and economic growth. Moreover, Fowowe (2008) showed that there was a significant positive relationship between liberalization and economic growth for 19 Sub-Saharan Africa (SSA) countries which included Malaysia with the analysis on annual data from 1978 to 2000. However, some vital control variables were omitted for the study which included population growth, fiscal policy, human capital formation and legal and institutional development. By the way of reducing capital market imperfections, the cost for external finance and financing constraints will be lowered down and reduced, which had proven that domestic financial liberalization will increase the economic growth (Greenidge & Belford, 2002).

However, in the study of Edison *et al*. (2002) with the control variables for the financial development level or the characteristics of institutional, there was no any evidence showed the effect of growth. Fischer, Gueyie and Ortiz (1997) showed that financial liberalization generated several risks rather than enhance economic growth. Stiglitz (2000) had come out a result that the problem of asymmetric information will not solve by financial liberalization which could bring disturbances for the effectiveness of financial intermediation's development in a liberalized market. According to Boot (2000), the reduction for the relationship lending had destroyed the information capital through the increasing of the asymmetric information. This statement explained that when liberalization implemented in financial markets, the market competition would increase and provided more opportunities for the borrowers to choose the cheapest financing and reduced or decreased the relationship lending indirectly. Moreover, Demirgic-Kunt and Detragiache (1998) also argued that

with increasing of competition in the market, exposure of financial liberalization to excessive risk taking increased and it may trigger financial or economic crises.

Bank Negara Malaysia (2007) noted that the increased financial liberalization would promote the development of financial system. However, increased financial liberalization also coexists with increased risks. The problem of the widening of income disparities would happen if the country focused more to achieve a competitive economic environment without taking the consideration about the consequences on the domestic economy conditions. As shown in the World Bank report (2007), there was a prediction about 30 percent of the adult populations in Asia were participating in the financial system. This condition would need some sensible measures for financial liberalization in order to prevent the pattern of financial development to deteriorate.

The consequences of highly fluctuation and volatility of capital flows on the domestic financial markets, financial system and economy performance was the challenging issue that matters the emerging economies as stated in Bank Negara Malaysia (2007). The exchange rate experienced the financial pressures with such short term flows. The excessive inflows would resulted the liquidity to be excessed that caused the price inflation and fuel asset. What is more, there would have adverse consequences on the household sector, domestic corporate due to the unexpected reversals of foreign funds from domestic financial markets. Even though there is more advanced or more efficient financial systems, the vulnerabilities and potential risks of the above issue would be a big challenging for the country (Bank Negara Malaysia, 2012).

According to Demirgic-Kunt & Detragiache (1998), financial liberalization also tends to increase financial fragility. The limited liability that compounded to

implicit and explicit guarantees caused bankers' preferences in risk far more different and greater than what the social had expected. The increases of financial fragility would be larger than what is socially desirable with the implementation of liberalization which is caused by the ineffectively of the supervision and prudential regulation in controlling the bank behaviour and at realigning motivations. In order to acquire the skills to perform quality and standard supervision, Demirgic-Kunt & Detragiache (1998) suggested that the banks can only through "learning-by-doing" and learn gradually. Moreover, they stated that banks will be more vulnerable to the economic problems with the newly liberalized systems.

Bear in mind, financial liberalization could magnify further the consequences of financial stress on the domestic financial system to the rest of the world. It could also emphasize and enlarge asset bubbles and boom bust cycles. However, if the domestic financial institutions are not entitle to survive in a more competitive environment, there would be the exposure of marginalization risk for them. Greater financial integration and international economic is the outcome that expected by financial liberalization and hence increased vulnerability to developments and cycles for other countries.

Since the early 1980s, many emerging East Asian and Latin American countries have enacted capital account liberalization (Lane & Milesi-Ferretti, 2007 and Kose *et al*., 2010). However, financial liberalization had given the individuals higher opportunity to move the funds more freely across the country where they can hide themselves from illegal action more easily if necessary (Blackburn & Forgues-Puccio, 2010). There seems to be lots of means for the people in the corruption practices whoever try to hide their behaviour for the illegal income that involved in the underground activities. They would rather change their expenditure's behaviour or invest the income to another business to escape the detection. When there is less restrictions on the financial transactions with the implementation of liberalization, the

money that obtained unlawfully would be much easier to launder. Besides that, to avoid the discovered and retrieved by the authorities, the individuals would bring the money abroad instead of keeping the money in domestic country. In this manner, appropriate and strict policies need to be designed in order to support financial liberalization to improve the quality of governance, and at the same time, to prevent the ease of corruption which may lower down the growth of the country.

At the same period, the World Bank has predicted that corruption costs the world economy more than one trillion dollars per year. This implied that liberalization causes corruption to be happened. World Bank took initiatives to improve the quality of governance by establishing the strategy which gave the priority to anti-corruption since World Bank had recognized corruption as the single greatest barrier to economic and social development.

One of the reasons that need to execute financial liberalization is some forms of the government intervention in the financial sector that caused financial repression which discourage investment and financial savings (McKinnon, 1973; Shaw, 1973 & Jomo, 2012). According to McKinnon (1973) and Shaw (1973), through financial liberalization, Malaysia had gained some promised net benefits from those reforms with joining few countries by renovating the restrictions and regulations in Malaysia's financial system. Yet, some monetary authorities had made some arguments for liberalizing the financial sector instead of using conventional shock therapy approach. Although many countries adopted this approach, they were more prefer to adopt gradualist approach because the conventional shock therapy approach created more and more banking troubles (Popov, 2000).

By going through gradualist approach, the development of the money and capital market can be promoted and encouraged further competition in country's

financial system and also the costly mistakes can be avoided that made by countries which adopted financial liberalization, all forms of financial repression and its consequences can be removed (Njie, 2006).

In addition, under this approach, government intervention of Malaysia took part deeply in its finance sector by proceeding credits to its 'priority sectors' that contained Bumiputera businesses, low-cost housing and small-scale businesses and widely using high statutory reserve requirements (Njie, 2006). Besides, central bank of Malaysia implemented credit terms guidelines for the banks in order to provide policy protocols to rule the economics of the priority sectors and identify the cost and the volume of credit to be furnished to the banks. These financial policies are executed simultaneously as the institutional formation is being developed over the time (Njie, 2006). Thus, government played an undeniable role in financial liberalization and protected against banking industry from the competitions due to banks were controlling the flow of funds and the growth of other sectors that will influence the economy of the country.

Moreover, foreign exchange intervention is another concern in the financial system which will affect the economic growth. This intervention mainly purpose is to reach several macroeconomic targets such as inflation, competitiveness and financial stability (Moreno, 2005) by determining short-term trends or fluctuation in the exchange rate and controlling the rate to avoid misaligned (Neely, 2001; Baillie & Osterberg, 1997). After the 1998 Asian financial crisis that pegging the Ringgit Malaysia to the US dollar, in July 2005, Malaysia changed to a mandatory float exchange rate regime which means the currency of Malaysia is free to go along with the market forces (Aziz, 2013). From then on, central bank intervention moved its focus to maintain foreign exchange market conditions and prevent extreme movements in the currency exchange rate in order to avoid destabilize the real economy (Aziz, 2013). From year 2005 to 2012 along with the gradual liberalization,

the development of Malaysia's foreign exchange market had well improved and the market participants were able to manage the risks by themselves. In short, foreign exchange intervention had helped the overall market and real sector become more stable and market participants had the capabilities to develop risk management by increasing gradually tolerance of higher volatility and smoothing exchange rate movements.

Following by the foreign exchange intervention, central bank stepped in again to concentrate on market dysfunction with the objectives of lightening volatility, controlling market functioning and lower down destabilizing effects on the real economy (Aziz, 2013). Market dysfunction is sort of portfolio flows, which are sizeable, short-term and sensitive to new information arrived, were the main factor to impact the currency volatility (Aziz, 2013). The example provided by Aziz (2013), central bank had involved countering tough portfolio inflows against the US dollar that acutely increased international reserve with a rise of over 50% from year 2007 to 2008. However, global financial crisis came in sudden and then countered turn the portfolio investment and pull down the currency. So, the central bank took a hand in restraining the high depreciation pressure on the currency in which result in lowered down the international reserve more than 25% (Aziz, 2013).

1.3 Objectives of the Study

The general objective of this study is to analyze the effects of the financial liberalization on the economic growth of Malaysia.

1.3.1 Specific objectives

1. To examine the effect of different types of financial liberalization on economic growth.
2. To examine the effectiveness of Financial System on the linkages between financial liberalization and economic growth.

1.4 Research Questions

Research questions represented as our interest and concern on this study. The whole research was stacked with these questions and the research objectives in order to seek out the result of these issues.

1. Which type of financial liberalization has a positive or negative significant impact on the economic growth of Malaysia?
2. How can we enhance the financial liberalization and economic growth with the financial system?

1.5 Significance of study

In our research, we would be able to know how the role of financial liberalization affecting the financial and economic performance in Malaysia. Some countries may enjoy the benefits while some may suffer the losses from financial liberalization. According to Ranciere, Tornell and Westermann (2006), there were two views about financial liberalization. The first view stated that financial liberalization was able to enhance financial development and caused a higher growth in long run. However, another view stated that more crises would be occurred due to the excessive risk-taking and the increases of macroeconomic volatility. We believe that it is important for us to go through this research because it is not applicable for all the country to implement financial liberalization. Through this research, researchers, government and policy maker could review it as a reference to comes out with a better policy in order to improve the financial and economic performance in Malaysia.

Financial liberalization is widely known and recognized as an integral part of development of financial system. Other restrictions on banking operations and policies on dismantling controls on interest rate may have significant implications for financial development and growth of economic. Financial fragility may be induced or financial system may be deepened by financial liberalization. However, from both theoretical and empirical perspectives, it was ambiguous for its long-term benefits on economy (Ang & McKibbin, 2007). Financing deepening might face difficulty due to the government restrictions on financial system operation such as direct credit programs, interest rate ceiling and high reserve requirements. This idea is proposed by the McKinnon-Shaw. Quantity and quality of investment will be affected and slowed down the financial system development. Based on empirical observation, inappropriate implementation of financial liberalization may induce financial system destabilization and trigger financial crises (Ang & McKibbin, 2007). Stiglitz (2000)

stated that the increased of financial crises frequency was closely related to financial market liberalization. Since flows of capital was cyclical in nature, liberalization was said to be systematically related to greater instability which worsen the fluctuation of economic. The unrealistic assumptions of financial liberalization hypothesis explained the failure of many developing countries to carry out financial liberalization programs in the 1970s. In opposite, market failures could be addressed by countries with imperfect financial market which included financial repression in certain of their government policies. Besides, it contributed to a higher financial development.

Different types of liberalization may result different impacts on the country. Therefore, our research provides knowledge and understanding on different types of liberalization. According to Bekaert, Harvey and Lundblad (2003), equity market liberalization provided an opportunity for foreign investors to invest in domestic equity securities. Financing constraints caused external finance more expensive than internal finance and made investment more sensitive towards cash flows. Equity liberalization directly reduced the financing constraints because more foreign capital was available and better corporate governance could be insisted. This helped to promote financial development (Bekaert *et al*., 2003). According to Eichengreen, Gullapalli and Panizza (2011), there was great attention on the issue about the effect of capital account liberalization on growth. Rodrik (1998) found that there was no correlation between capital liberalization and growth. However, Klein (2005) found that capital account liberalization did promote growth for the country that had better quality institution. Therefore, it is important for us to find out the growth effect of capital account and equity market liberalization on Malaysia.

As we know, the financial system is important in facilitating economic development. In the economic growth process, investment is an essential element that needs to be productive (Krueger, 2004). Banks and other financial institution must be

able to play a role in analyzing risk and efficient allocation of resources that contribute to a possible rapid growth. We could consider that deepening and broadening of financial sector could be drove through competition. The competition within financial sector reduces costs and increases efficiency. When the financial system is more efficient and competitive, the spread between deposit and lending rates will become lower. Well-run banks are outperforming those less-skilled if the able to assess risk and efficiently allocate resources. The non-performing loans (NPLs) level has to be controlled and monitored carefully because a high level of NPLs indicates inefficient resources allocation, weak risk management and lastly hampers growth by depriving more productive resources activities. Therefore, in order to manage the risks properly, the system needs to be transparent and broaden the financial intermediation. A poor financial sector generates financial instability which could harm on an economy. It deprives growth by inefficient allocation of resources and fails to keep pace with changing needs of individuals and firms. From the Asian financial crisis of 1997-98, we can see how a weak and poor financial system caused detrimental to the country. According to Bank Negara Malaysia (2013), the Financial Sector Masterplan (FSMP) and the Financial Sector Blueprint (Blueprint) were two 10-year masterplans that pivotal to the financial sector development process. Furthermore, it played an important role in aspect to meet the emerging Asia's growing financial needs which will help to strengthen financial linkages in the region. Thus, it is worth to study whether these two types of masterplans would help the implementation of financial liberalization in Malaysia.

1.6 Chapter layout

This study consists of five chapters. The remaining sections are organized as follow: Chapter 2 is the literature review on financial liberalization from the past studies followed by Chapter 3 which explained the data sources of variables used and methodology employed in the study. Subsequently, the results interpretation are presented in Chapter 4. Lastly, Chapter 5 will be the conclusion and discussion for our study and the policy implications with recommendations for future study.

1.7 Conclusion

In short, chapter one provides a guideline to the readers to understand and have a concept on what would be discussed in this study. This chapter explained the research background, problem statement, objectives and significance of study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Over the past decades, financial liberalization had been constantly showed it's important for the financial and economic development of a country. Although some country showed negative relationship among the liberalization and economic development, but some of the research showed the positive result between these relationships. Undeniable, impacts of liberalization on development of country had gained the attention of policymakers and aroused the curiosity of researcher to study on it. We reviewed the relationship between liberalization and economic growth carefully based on the relevant literature and studies that had been done previously in this chapter. We carried out the theoretical framework and formulating hypotheses through reviewed on the findings that had been found by the previous researches as a foundation. This chapter also provided the theory applied in this research and come out with a proposed conceptual framework for the research.

2.1 Review of Literature

2.1.0 Relationship between Financial Liberalization and Economic Growth

Literature on financial liberalization is plenty and large. There are numerous researches focus and studies about the relationship between financial liberalization and financial or economic performance for the past few years from now.

First of all, the study on causality relationship among financial liberalization and economic growth has been focused by King and Levine (1993) and De Gregorio and Guidotti (1995). Kwan, Wu and Zhang (1998) showed that the financial deepening had positive effect on growth through exogeneity tests for some Asian countries with high performing.

Besides that, the impact of financial liberalization on investment, saving and economic growth of Pakistan has been observed by Khalid (2004) who wants to examine the advantages from financial liberalization. Findings indicated that there was a small influence of financial liberalization policies to the economy. There is no any significant effect on investment, saving or economic growth even with the inclusion of numerous indicators for financial liberalization. However, some positive impacts on Pakistan's economy have been revealed by recent developments.

Prasad, Rogoff, Wei and Kose (2005) examined the influence of financial liberalization on the economic growth and macroeconomic volatilities in the

emerging countries, 22 countries and 33 countries which they defined them as financially more liberalized (MFI) countries and financially less liberalized (LFI) countries respectively. The findings provided strong and sound evidence to support financial liberalization towards higher economic growth.

Moreover, involvement of governance in corruption and the impact of international financial integration on economic development is studied by Blackburn and Puccio (2010). According to their study, if governance was free from illegal activities, financial liberalization was good for development. Only when fundamental reforms occur, poverty and corruption can coexist persistently.

Shan and Jianhong (2006) in China studied the relationship between financial liberalization and economic growth during 1978 - 2001. The variables used in the studies are the variation rate in the real GDP, labour forces net investments, total credits and the rate of foreign trade to national income. In the research, they concluded financial liberalization had a positive impact on economic growth.

A new empirical analysis regarding the impacts of financial liberalization on economic growth and occurrence of crisis has been introduced by Ranciere *et al*. (2006). The findings indicated that the financial liberalization had a direct positive impact on per capita GDP growth whereas a negative impact on economic growth when the occurrence of twin crisis. Due to the fact that banks taking high risk and reduced screening of projects, the probability of twin crisis had increased significantly by financial liberalization.

Another research about the impact of financial liberalization on economic growth is discovered by Lee and Shin (2007). Based on the research, the crisis

experienced country group showed a larger net effect of liberalization on economic growth than in overall sample group. Basher and Khan (2007) concluded that if good governance and basic infrastructure were unavailable in a poor country like Bangladesh, the country would not be capable to get advantage from liberalized policies. Ang and McKibbin (2007) concluded that the relationship among financial liberalization and long-term economy is unclear and ambiguous.

A sample of ten new European Union (EU) member countries and Turkey has been employed by Ozdemir and Erbil (2008) for the purpose to examine the impact of financial liberalization on long run per capita and economic growth. The findings showed the relationship among financial liberalization and economic growth is positive and significant however there was a negative impact of trade openness on economic growth. Wadud (2009) stated financial development and economic growth had a long run causal association for South Asian countries (Bangladesh, India and Pakistan) covering the period of 1976-2008.

Haiss *et al*. (2011) noted a weakening effect of financial liberalization on economic growth. The effect of financial deepening on economic growth for developed countries was positive and statistically significant, for developing countries was positive and insignificant while for less developed countries was negative and insignificant (Rousseau & Wachtel, 2011).

Ahmed (2013) stated that the income growth in Sub-Saharan African (SSA) countries was negatively related to the financial liberalization, on average, which means financial liberalization did not give any advantages to the income level of the people in that country. Doganalp (2013) had investigated the impact of financial liberalization on economic growth in Turkey and concluded that financial liberalization had a positive contribution to the economic growth.

By using annual time series data, Munir, Chaudry and Akhtar (2013) had undergone the empirical relationships between economic growth and financial liberalization in Pakistan covering the period of 1972-2010. The findings showed that financial liberalization had a positive relationship with economic growth.

From the former, it could be seen that results from present literature on the impact of financial liberalization on economic growth have been mixed. The purported benefits of financial liberalization on economic growth have not been unambiguous. More empirical works are definitely needed to prove the finance-growth nexus established in the financial liberalization literature.

2.1.1 Impact of Liberalization towards Economic Performance

In developing countries, financial liberalization had been named as one of the growth ingredients (Adam, 2011). In the economic development process, government has planned financial liberalization to play an important role in their markets in the late 1970s up to the early 1990s. Various researchers had conducted numerous empirical researches to confirm whether financial liberalization has a positive effect or otherwise.

McLean and Shresta (2002) conducted a research on international financial liberalization and economic growth in 40 countries which consists of 20 developing and 20 developed countries in Latin America, Africa and Asia. The authors examined the link among international financial liberalization and economic growth with a specific emphasis on the composition of capital flows. Their results showed that economic growth had been enhanced by the portfolio inflows and foreign direct

investment (FDI). In contrast, there is a negative impact of bank inflows on economic growth from the findings.

Baliomoune-Lutz (2003) carried out a study to explore the relationship between financial liberalization and economic growth in Morocco. The results gave strong evidence that financial reforms leads economic growth where it does not find any evidence that financial development leads economic growth. For SADC countries, a study carried out by Nyawata and Bird (2004) to examine the impact of financial liberalization on economic growth. The study concluded that financial liberalization had to be placed inside the situation of other supporting policies in order to be successful in stimulating economic growth. If such policies were absence, the effect of financial liberalization was probably to be relatively not significant, thus causing neither the economic success nor failure.

There was a research done in Uganda to examine the impact of financial liberalization on the real sector and its effect on the conduct of banking business (Kasekende & Atingi-Ego, 2003). In the study, the variables of gross domestic product (GDP), premium on official exchange rate, inflation rate, lending rate and commercial bank credit to the industrial sector were used and the results showed that financial liberalization has stimulated competence gains in banking industry and therefore, the increased growth of credit to private sector following financial liberalization led to economic growth.

Akpan (2004) discovered the impact of financial liberalization in the practice of an increase in financial deepening (M2/GDP ratio) and real interest rates on the economic growth rate in Nigeria. The results prove that economic growth is not likely to be accelerated by the interest rate liberalization alone based on the findings of low

coefficient of the real deposit rate from the research. Generally, the results imply a positive effect on the economy of Nigeria.

In India, Nair (2004) constructs a continuous time series financial liberalization index which consisted of total credit by bank and other financial institutions to household sector, foreign investment, real effective exchange rate and market capitalization ratio to examine how household sector saving rate influenced by financial sector liberalization measures. The increased credit availability showed that financial liberalization caused the increases in consumption rather than savings and hence can be concluded that there is a negative effect of financial liberalization index on household saving rate. The evidence of this study provided argument invalidate the Mckinnon-Shaw hypothesis which stated that financial liberalization was able to increase economic growth and savings and financial repression will do otherwise.

Panel data has been used by Fowowe (2004) to evaluate how the growth of 19 countries in Sub-Sahara Africa (SSA) influenced by financial liberalization policies for the period from 1978 to 2000. Two indexes and a dummy variable for financial liberalization (assigning value of zero before liberalization and 1 after liberalization) were created. Initial income per capita, investment, degree of openness, debt service ratio and life expectancy are the control variables being used in the research. The study showed there was a significant positive relationship of financial liberalization policies on economic growth. The study provided evidence to support the effect of financial liberalization stimulating economic growth.

Egypt, Morocco, Turkey, Jordan and Tunisia are the sample of five MENA countries used by Achy (2005) for the study of the impact of financial liberalization on investment, savings and economic growth. In order to examine the impacts on growth, the estimated growth equation involves real GDP to a set of financial depth

measures, private investment rate, external debt/GDP ratio, real interest rate, real exchange rate overvaluation and annual change of terms of trade, all proxies for financial liberalization. The results suggested that financial liberalization has caused further distortion of credit allocation in favour of consumption at the expenses of productive activities since the growth experience is unsuccessful described by financial depth indicators in these countries. The study demonstrated that financial liberalization was contradictive to financial development and in line with the Keynesian view.

With the purpose of examine the impact of financial development towards economic growth in Egypt, Abu-Bader and Abu-Qarn (2005) used four control variables which are gross domestic product (GDP), money stock to nominal GDP ratio, bank credit to private sector to nominal GDP ratio, credit issued to non-financial private firms to total domestic credit ratio, representing alternatives for financial development. The results indicated that the recovery in economic performance of Egypt in the 1990s is caused by the financial liberalization which facilitated the increment in private investment. The results concluded that the relationship between financial liberalization and financial development was direct.

Tokat (2005) appraised the effect of financial liberalization on some macroeconomic variables in two developing countries (India and Turkey) for the period 1980 to 2003. The findings showed that there was an increased interdependency between the variables (the changing dynamics of domestic industrial production index, trade-weighted average foreign industrial production index and domestic interest rate) following the financial liberalization process. The study indicated that both India and Turkey had been benefited by financial liberalization which supported by the evidence on the growing impact of foreign economies on both countries macroeconomic variables.

Bashar and Khan (2007) in their study of Bangladesh examined the effect of liberalization on the country's economic growth with the used of variables of GDP per capita, labour force, gross investment, trade openness indicator, net capital inflows, real rate of interest and secondary enrolment ratio. The findings indicated that the coefficient of the financial liberalization policy variable (real interest rate) was significant and negative, showing the financial liberalization has a negative impact on Bangladesh's economic growth. The Mckinnon-Shaw hypothesis stated that financial liberalization was important for economic growth but the study rejected the statement.

Gecizi (2007) conducted a study in two developing countries (India and Turkey) with the aim of examine the impact of financial liberalization with some macroeconomic variables. The changing dynamics of domestic interest rate, trade-weighted average foreign industrial production index and domestic industrial production index were being analyzed in the study. The results showed that following the financial liberalization process, there was an increased interdependency between the variables. The study provided sufficient evidence that financial liberalization gave beneficial to both India and Turkey which implied by the increasing influences of foreign economies on both countries macroeconomic variables.

In Sri Lanka, the role of financial liberalization on money demand as well as economic growth has been investigated by Paudel and Perera (2008). The research did not discover financial liberalization had significant positive impact in money demand and economic growth of Sri Lanka. In the circumstance of economic growth, the relationship with financial liberalization was negative in the short run however the financial liberalization proved a positive but insignificant role in the long run.

Munir, Awan, and Hussain (2010) in Pakistan investigated the short run and long run association between savings, investment, real interest rate on bank credit and bank deposits to private sector, go along with the effect of financial liberalization on key macroeconomic variables. Due to high inflationary circumstances in Pakistan, interest rate has been negative for certain years and thus, the results show that there is no positive influences of financial liberalization on private investment and private credit. Their results strongly support the Mckinnon-Shaw hypothesis even though evidence disclosed that financial liberalization made no significant effect.

Banam (2010) explored the influence of financial liberalization on economic growth as well as studied the determinants of economic growth in Iran. The findings suggested that there was statistically significant and positive effect of financial liberalization, financial intermediation, capital and R&D on economic growth while negative and statistically insignificant effect of reserve requirement ratio on economic growth. Moreover, there was a positive but statistically insignificant effect of exports on economic growth. The role of labour was the important findings of the research. In case of Iran, labour had negative effect on countries' economic growth which suggested that labour force was not much productive.

Adam (2011) explored the effect of Ghana's financial openness encouraged growth on poverty. Annual Standard of Living Index (SLI) was proxy for poverty and by using Principal Component Analysis (PCA), the financial liberalization index was created. The findings indicated that the standard of living had a positive relationship with growth, although it is disproportionate. Moreover, evidences showed that financial liberalization had a positive long-run relationship with growth. Overall, this showed that Ghana's financial liberalization had contributed positively towards its economic growth.

Odhiambo (2011) examined the effect of financial liberalization in emerging countries of South Africa, Lesotho, Tanzania and Zambia. Results of the study showed that financial liberalization granger-causes economic growth in Zambia only and also in other countries even though financial liberalization caused financial development in all study countries. In other explanation, it means that the economic growth encourages the development of financial sector. The findings indicated that financial liberalization might be sensitive to a country's level of financial development since the relationship among its and economic growth is at the best ambiguous.

A study conducted by Akingunola *et al*. (2013) to investigate the linkage between economic growth and financial liberalization in Nigeria. They discovered that at both 1% and 5% level of significance, the growth process of Nigerian economy did not impact significantly by financial development and monetary policies. The financial liberalization development was proxies by liquidity ratio that was liabilities to GDP, total deposit and real interest rate but the real GDP was to measure the economic growth.

Hye and Wizarat (2013) studied whether financial liberalization has any significant effect on economic growth in Pakistan. The research used a financial liberalization index (FLI) (developed by Hye and Wizarat (2010)) and Auto-Regressive Distributed Lag (ADRL) technique to examine the relationship. However, the findings concluded that in the short run, FLI has a positive relationship with economic growth whereas in the long run, FLI is statistically not significant. Besides, it also concluded that real interest rate has negative and significant impact on economic growth in long run.

2.1.2 Relationship between Equity Market Liberalization and Economic Growth

Bekaert, Harvey and Lundblad (2005) demonstrated that economic growth did increased by equity market liberalization which enables investors from foreign countries to transact in domestic securities and vice versa. They discovered the increase of approximately 1% in annual real per capita GDP growth was caused by equity market liberalization. Besides, they also found that it was statistically significant for this increase. It was surprisingly large for the result of approximately 1% increment in the real growth following an equity market liberalization. Therefore, equity market liberalization was expected to intertwine with both financial development and macroeconomic reforms. Importantly, they still found that equity market liberalizations has a statistically significant impact on economic growth after the controlling for either the country's capability to enforce its laws, banking crises, financial development, macro-reforms or legal reforms.

According to Gamra (2009), many empirical studies supported that economic growth stimulated by stock market liberalization. In additional, it showed an instantaneous, robust and direct linkage between these both variables. The previous researchers started their analysis by increasing the variables in standard set of growth model with their variable demonstrating the stock market liberalization official dates. After that, an econometric methodology which enabled the extensive time-series as well as information of cross-sectional for tests (GMM) was introduced. Financial liberalization was found leading to an increase of 1% in annual per capita GDP growth on average. Gamra (2009) stated that strong evidence was found by Fuchs-Schundeln and Funke (2001) to support the hypotheses that economic growth was improved by equity market liberalization over a long period 1975– 2002 among 27 developing countries. They showed that in the five years following the liberalization,

an increase of 4% in annual per capita GDP growth was resulted by equity market liberalization.

Li (2012) showed strong growth effects of equity market liberalization by instrumental variables (IV) methodology to present empirical evidence. From Li's study, it suggested equity market liberalization significantly boosts growth. Moreover, with equity market liberalization, both portfolio investment and foreign direct investment increased significantly which indicated that the policy had significantly impacted on international capital flows. Besides, the result also presented that countries with different level of income and size of equity markets had systematic alterations existed in the growth effects. In a low-income country, equity market liberalization led to an increase in physical capital accumulation and in turn spur growth. Meanwhile, countries with middle-income and high-income benefited from equity market liberalization through enhancement of productivity. Capitalization of stock market intermediates the equity market liberalization growth effects. Countries that have larger equity markets are found to have additional growth effects.

2.1.3 Impact of Equity Liberalization towards Economic Performance

Equity market liberalization provides the right for domestic investors to trade in foreign equity and allowed foreign investors to hold domestic equity without any restrictions (Souza, 2004; Bekaert, Harvey & Lundblad, 2005). In order to prevent the securities to be sold at discount, many countries made decision to open their stock markets to the investors from foreign countries in times of economic prosperity. Financing constraints were directly reduced by equity market

liberalization. This was because foreign capital became abundant and the foreign investors could insist on better corporate governance, which indirectly decreased the external and internal finance cost (King & Levine, 1993; La Porta *et al*., 1997; Bekaert *et al*., 2005). Due to the reason that cost of capital had been reduced and having better corporate governance, investors' protection would promote economic growth and financial development (Bekaert *et al*., 2005). In a study of 16 countries, Levine and Zervos (1998) found that equity market liberalizations enabled the stock markets to become more liquid. Moreover, Bekaert *et al*. (2005) found that countries with a higher level of institutional quality had a greater effect of equity market liberalization compared to countries with median level of institutional quality.

According to Ranciere, Tornell and Westermann (2006), Martin and Rey (forthcoming) analyze the stock market liberalization impact on asset prices, capital flows, and investment. The study showed that for an emerging market economy, two possible outcomes can be caused by stock market liberalization when there were transaction costs in international assets. Under normal circumstances, the positive role that performed by liberalization such as expanding diversification opportunities, generating capital inflows, and lowering the cost of capital can result in a higher growth and investment. On the other hand, under certain circumstances, the state of the economy was pessimistic expected to be self-fulfilling and could lead to a decrease in the demand for capital outflows, assets and financial crashes associated with low investment and low growth.

According to Naceur, Ghazouani and Omran (2008), it was a must to control and manage for other relevant factors that might bring influences to the economic growth so that analysis on the effect of stock market liberalization on economic growth could be carried out. In their study, the growth equation was introduced with the proxies for legal environment, reforms of financial and reforms of macroeconomic. The economic growth was measured by the used of real GDP per

capita growth. The premium of black market, the inflation level, trade openness, and the government consumption ratio to GDP are used as measures of macroeconomic reforms.

Based on Naceur, Ghazouani and Omran (2008), the effects of inflation on growth were studied by Fischer (2005) and the study carried out a result that the Mundell–Tobin effect was outweighs by the high inflation. Thus, inflation was proved to have detrimental effect on growth. Besides, higher inflation intended to deduct investment spending and labor supply which negatively and directly influenced accumulation of capital and growth (Cooley & Hansen, 1989; De Gregorio, 1993; Bittencourt, 2006). Therefore, the natural logarithm of one added the rate of inflation was used by Naceur, Ghazouani and Omran (2008) to reduce the impact of some outlier observations. In addition, Bekaert *et al*. (2005) also found that inflation and economic growth had a strong negative relationship. Government consumption was used with a purpose to capture the expenditures of public that indirectly affect productivity but distortions will be entailed on private decisions ratio. Government consumption was expected to have a negative coefficient.

As referred to Bekaert *et al*. (2005), there were several researches (Henry, 2000; Mathieson & Rojaz-Suarez, 1993) on how local macro-reforms such as the foreign exchange premium of black market, the inflation level, and trade openness were typically included in the developing countries' policy reforms (include equity market liberalization). Bekaert *et al*. (2005) indicated that there was a highly significant and positive coefficient of trade openness which suggested that open countries had higher growth than relatively closed countries. Trade openness was measured as the exports ratio added the imports to GDP. The higher growth considered to be induced by lower barriers to trade (Wacziarg, 2001; Edwards, 1998; Sachs & Warner, 1995; Lee, 1993; Dollar, 1992).

Theoretically, Henry (2000b) argued that cost of equity was deducted by stock market liberalization through reducing equity premium and interest rate (Naceur *et al*., 2008). The deduction of the cost of equity led to accumulation of capital which was due to the implementation of liberalization that have caused some investment projects started to earn profit from the negative net present value. Furthermore, Levine and Zervos (1998b) argued that increase of capital inflows may enhance liquidity in the financial market. In turn, a decrease in the premium of equity will occur due to this increased liquidity (Naceur *et al*., 2008). In addition, the investment with a longer duration to generate high returns could be facilitated by enhancement of more liquid stock markets and risk sharing. As a result, if the liquidity of equity market was enhanced, greater incentives to invest in collecting of information will be provided and led to enhancement of the allocation of resources, and thus growth was promoted.

What is more, The Economist (2009) mentioned that many countries had imposed their own policy on liberalization to overcome the damping effect that caused by the global recession. However, Malaysia's prime minister, Najib Razak set up a new economic reforms which dismantled the longstanding race-based investment quotas. On 22 April 2008, plans on elimination of local-equity requirements for investment in services sector was announced by the Malaysia's government in order to attract more foreign investment and strengthen the competitiveness and efficiency of Malaysia economy. Companies in the sector to offer a 30% stake to investors from among the Bumiputera are required by the old rules. In certain parts of the services sector, the lifting of the 30% Bumiputera equity rule was considered had positive implications for foreign investment and it was the government most significant recent reforms. Plus, 27 services subsectors were lifted under the equity rule, such as tourism, business services, transport services, health and social services, computer and related services. Furthermore, up to five international law firms with expertise in Islamic financial services will be enabled to carry out practices in Malaysia.

2.1.4 Relationship between Capital Account Liberalization and Economic Growth

According to Honig (2008), because of having the potential effects to improve in welfare for developing countries and emerging markets, therefore it is getting substantial attention for the effect of capital account liberalization on economic growth. Between those researchers who had done their studies on capital account liberalization, Quinn (1997) found that real per capita growth of GDP had a strong and significant effect following capital account liberalization. Souza (2004) showed that in order for banks and foreign companies to borrow abroad through capital account liberalization, the authorities should be noticed and informed. Furthermore, the license should be granted automatically. For both transactions of current account, it shows the existence of special exchange rates however it does not accounted for transaction of capital account and without restrictions on outflows in capital (Souza, 2004). Bumann, Hermes and Lensink (2013) concluded those previous studies which done by other researchers that the result was positive and statistically significant for only those regressions that choose to use the data of capital flow. Furthermore, they also found out there was a weak correlations between capital account liberalization and growth.

A study is carried out by Faria, Paula, Pires, and Meyer (2009) with a purpose to investigate the linkage between economic performance, macroeconomic stability and capital account liberalization in Brazil. They come out two models with the variables of financial liberalization de-jure index which included GDP, nominal exchange rate, country risk and interest rate in the first model whereas in the second model, they used financial integration de-facto index which included GDP, interest rate, nominal exchange rate and rate of inflation rate in the second model. Their findings showed that there was no evidence to support the idea stated that positive impact is generated by financial liberalization on inflation towards economic growth.

Other than that, Klein (2005) founded that capital account liberalization did encouraged and enhanced the growth for those countries which have better institutions. Klein and Olivei (2008) showed that capital accounts liberalization comes along with a significant effect of on growth of economic and financial developmen. They stated that those countries with capital account restrictions had significantly smaller financial depth compared to countries with open capital account (Klein & Olivei, 2008). Furthermore, they also proved that capital account liberalization did promote the development and efficiency of financial intermediation. In addition, it could also provide contribution to a country in term of the financial system development. This is proved by the evidence where mobility of free capital gives the chances to borrow at the most favorable rates, to recognize the highest return on saving, and to diversify away country-specific risk. However, Klein (2003) found that there has no significant impact on economic growth by the financial liberalization. Moreover, the author verified that liberalization employed impact in a positive way on the growth within countries that have medium income while remains insignificant in countries that have low and high income.

Based on Arteta, Eichengreen and Wyplosz (2001), they had successfully proved that there was a relationship which in a positive direction occurred between capital account liberalization and economic growth. Besides, it is also highlighted by Eichengreen and Leblang (2003) that there is more likely to have a positive effect of capital account liberalization when a country has local financial markets which are well regulated and developed. Moreover, Eichengreen, Gullapalli, and Panizza (2011) stated that if the country had well development in financial system, the rule of law, strong creditor rights and standards of accounting, , thus capital account liberalization will only show positive impact to the country's economy performance. It means that when the country imposed the capital account liberalization along the financial system which is less efficiency, on adverse impact will happen to the economic. Eichengreen (2001) also concluded that the studies which support that it is a positive relationship among capital account liberalization and economic growth had received

inadequate supported by empirical evidence. He stressed that better datasets of capital account liberalization and better indicators are required. Prasad *et al*. (2003) who had reviewed fourteen studies came to a conclusion which stated that there was no strong, robust, and uniform evidence to show support for the theoretical argument that financial liberalization promotes economic growth to a higher rate.

By reviewed in ten empirical studies regarding the capital account liberalization effect, Edison *et al*. (2004) found that only 3 out of 10 of studies shows association between liberalization and growth was unequivocally positive. In countries which are considered large cross-sections, Kraay (1998) found there has no evidence to support that the combination of strong financial systems and open capital accounts was associated with long-term economic performance.

Edwards (2001) addressed that there was dissimilar impacts of capital account liberalization in low and high income countries. Edwards successfully appealed that growth is slowed down by liberalization in low income countries however enhanced in high income countries during 1980s. He proved this by applying the controls of Rodrik (1998) together with the measure of Quinn (1997) used for the capital account restrictions intensity in 1973 and 1988. Meanwhile, the interaction term among openness of capital account and per capita income enters positively, in other words, the dummy variable for openness of capital accounts was entered in opposite way negatively. Edwards (2001) advance disclosed that since the index of IMF applied by Rodrik (1998) was replaced for Quinn's (1997) more distinguished measures, the significance of capital controls disappeared. Therefore, it was attractive to consider that the non-appearance of an impact in previous studies was a statistical artifact. There were some recommendations that capital account liberalization was more favourable in developed countries which are more institutionally and financially.

2.1.5 Impact of Capital Account Liberalization towards Economic Performance

Quinn (1997) was one of the researchers who successfully conducted the first study that verify the positive effect between capital account liberalization and economic growth. Quinn (1997) increased the set of variables involved in a standard growth regression with a variable on behalf of his indicator of the change in financial openness variable or the change in a wider measure of openness. Quinn's experiential estimates used the period of 1960 to 1989 and 58 countries which are cross-section. From the results, he recommended that there was a strong and significant impact that caused by capital account liberalization changes to the growth. However, in the result of Quinn, it was difficult for us to sort out the separate impacts of financial openness and a wider openness measures. This is because these two indicators are not comprised with a regression. Therefore, to the extent that the change in financial openness was associated with the change in the openness of trade in goods and services, Quinn was able to seek of a significant impact of the change in capital account liberalization on growth may disclose the relationship of changes in restrictions on the capital account and the current account.

Consequently, there were several evidences support the hypotheses of financial liberalization has a positive effect on growth was reliant on the existence of relatively developed domestic institutions, the level of economic development and well organised macroeconomic policy. However, this outcome is considered not very significant and not sensitive to measures employed to capture policy environment and institutional development. Hence, Klein and Olivei (1999) discovered that during 1976–1995, economies experienced quite higher rates of growth for those who had high openness in capital markets. Nevertheless, this result was mostly driven by the developed countries in an assorted sample of 82 nations.

Arteta, Eichengreen and Wyplosz (2001) evaluated the robustness of this result. With three periods of analysis which are 1973–1981, 1982–1987, and 1988–1992, they applied the same measures of liberalization on a group of data of 51 to 59 countries. They questioned why other studies failed to discover any impact that is significant between capital account liberalization and growth but Edwards (2001) achieved such strong results that show capital account liberalization has such a significant impact on growth. They wondered whether Quinn's measures were only suitable for Edwards's studies which demonstrating capital account openness in the period in 1973 and 1988. They also noticed that countries which are wealthier had more impacts in the regressions as compare to those countries which are poorer with measuring observations by 1985 per capita GDP. There were also problem raised regarding the exogeneity of instruments employed for capital account liberalization. In additional, it also raised problem due to other hypothetically relevant measures of openness are excluded, for instance the current account openness, which may be interrelated with capital account openness.

In contrast, assessments that carried out by Arteta, Eichengreen and Wyplosz (2001) recommended that the result reported by Edward may be sensitive to a range of factors. Due to this reason, they concluded that there was minor proof to support that capital account liberalization had more favourable impacts in countries have middle and high income as compare to those in high poverty of emerging countries. In summary, the research approved a first order positive linkage among capital account liberalization and economic growth.

O'Donnell (2001) and Chanda (2005) also studied the possibility of contrary impacts of capital account openness across countries. O'Donnell (2001) used a quantitative-based measure and both IMF rules-based measure to investigate the effect of capital account liberalization. By applying a rather usual setup, O'Donnell (2001) discovered that the rules-based measure more likely to be coarse an indicator

of the degree of capital account liberalization, for instance it did not look at the nature of different types of controls. Conversely, he discovered that capital account liberalization seem to boost growth of economic by using the quantitative measure. However, he also found that the welfares to all countries were unequal like what other researchers had discovered before. Chanda (2005) proposed that the society ethic level and linguistic heterogeneity which represent a proxy for the number of interest groups may cause a different influence on the open capital accounts. Particularly, the capital controls will cause higher inefficiencies and weaken growth for countries that has a high ethnic level and linguistic heterogeneity.

Faria *et al*. (2009) investigated the association between capital account liberalization macroeconomic stability and economic performance in Brazil. In the analysis, two models were created; one of the models is with de jure index of financial liberalization which comprises GDP, country risk, interest rate and nominal exchange rate whereas the other model is with de facto index of financial integration comprising GDP, interest rate, inflation rate and nominal exchange rate. According to the findings, it showed no evidence to support that there was positive impact of financial liberalization on inflation and growth of economic. Despite increasing the inflation rate, it had a contrary impact on exchange rate. The study supported the critique of financial liberalization that its destabilizing effects replaced its potential beneficial effects.

In spite of that, Law and Azman-Saini (2013) examined the impact of capital account liberalization on economic growth started from 1970 to 2004 in Malaysia. De facto which indicates the capital flows volume and de jure which indicated the liberalization index were two different types of measures of capital account liberalization which may be used in the analysis. The de facto measure was financial openness indicator and de jure measures were capital account liberalization indices. Referring to the bounds test suggested by Pesaran *et al*. (2001), the real GDP per

capita, human capital, labour growth, capital stock and capital account liberalization were bound together by general trends or when equilibrium is achieved in long run. According to the findings of Law and Azman-Saini (2013), they showed that the impact of liberalization on economic growth depended on the measurement used in the research. The de jure measure showed a negative but statistically robust impact on economic growth where the de facto showed a significant positive impact on growth. This indicated that the de facto measure boost economic growth in Malaysia but the same impact do not come along in the de jure measure. Because of the extension of capital to flow in and out, retaining de jure control did not represent the government could control growing de facto openness. Besides, the findings indicated that there was a robust impact on economic growth from interaction terms among capital account liberalization and rule of law and financial development variables. The results suggested that capital account liberalization in Malaysia supplements financial development function and enhanced the institutions in stimulating real income. Strong financial development and good institutions play an essential position in confirming that openness of capital account did encouraging better and greater economic performance.

Numerous researchers have found that there has no relationship between openness and growth. Back to reality, Grilli and Milesi-Ferretti (1995) contributed in determine that it is not sustainable to conclude capital account liberalization spurred growth even though their paper did not concern on this. By using cross section countries, they studied the average growth of per capita income for five non-overlapping with duration of five years among 1966 and 1989. The authors regressed growth rates of five years on share (*Share)* and similar measure that captured the existence of controls on current account (*CurrAcct)* and a multiple exchange rate (*MultEx*) system from *Exchange Arrangements and Exchange Restrictions.* Furthermore, variables for examples political variables, the schooling level and the initial income are comprised (Grilli & Milesi-Ferretti, 1995). Using lagged values as the instrument, the three variables *MultEx, CurrAcct,* and *Share* entered as forecasted

values from the regression of instrumental variable. Capital account controls could entered with a positive sign in some cases (*Share* enters negatively), whereas negative sign sometimes entered by the indicator of current account controls (*CurrAcct* is positive).

Rodrik (1998) studied the impacts of capital account liberalization on economic performance in emerging countries. For capital account liberalization, the indicator that used in his study was the period started from year 1975 to 1989 where there has no restrict on the capital account. Other important variables for instance initial secondary school enrolment, initial income which plays a role as an index of government institutions quality and regional dummies for 100 developing and developed countries are controlled in the study. Besides, the study found that there has no association among the capital account liberalization within these 100 countries and three economic performance indicators, which were GDP per capita growth, inflation and investment share in GDP. As conclusion, there was lack of evidence to prove that countries without controls on capital developed faster, encountered lower inflation or invested more.

Kraay (1998) found no significant relationship between capital account openness and economic growth. The analysis comprised a range of measures which are a measure according to the actual net flows of capital and indicator of capital account openness (*Share,*) based on Quinn. Every one of these measures was related with a dissimilar size of sample. The dependent variable used was the growth in output between the period 1985 and 1997. He unsuccessful to catch a significant impact of *Share* or the *Quinn* indicator on growth, However then, when all these indicators used were interrelated with the average financial account balance (from the statistics shown in balance of payments), he did discover on some important impacts.

Lastly, Edison *et al*. (2002) discovered that there is just a little evidence of an association between capital account liberalization and economic growth. By applying a new set of data and different types of econometric techniques which focused on quantitative measures instead of apply the rule-based measures, the authors detected that financial integration does not promote growth of economic by itself, even after particular institutional, financial, policy and economic features were controlled. They did, yet, found that international financial integration has a positive linkage with real per capita GDP, stock market development, a country's law-and-order tradition, banking sector development, educational attainment and integrity of government which indicates the corruption of government is at a low level.

The study of certain foundation for the accepted standards ideas were referring to Sarno and Taylor (1999). They looked at the dependent upon consequent of existing perpetually and not permanent elements of capital flows to Latin American and Asian developing countries. They stated that low existing perpetually elements in equity, bond and official flows, throughout the time, that commercial bank credit included entirely great scale of temporary elements, foreign direct investment were near completely permanent.

Furthermore, the literature on capital account liberalization gave some mixed conclusions on the consequences of liberalization. One of the past studies in this area by Alesina, Grilli and Milesi-Ferretti (1994), stated no significant result of openness on development. Their circumstances are referred on a study of 20 industrial countries from 1950s to 1990s.

2.1.6 Relationship between Financial Liberalization and Financial System

Munir, Chaudhry, and Akhtar (2013) stated that as policy measures, financial liberalization can deregulate certain financial system's actions and reform its structure with a favorable regulatory framework. The loanable funds would be gained in result of higher investment and economic growth which caused by the attraction of high interest rate to encourage more savings to bank deposits.

Ranciere *et al*. (2006) studied and stated that financial liberalization had bring an effect in a positive way on growth of economic as well as the probability of twin crisis which are banking and currency crisis that led to negative impacts on the growth. Banks high risk taking and less screening of projects were the main reasons that led to the incidence of the crisis. Other than that, the measure of financial liberalization was to remove the financial obligations, through allowing the central bank to has relaxation of equity markets, elimination of credit control, more authorities to control the monetary policy implementation, eradication the barrier on capital flows, restructuring and privatization of financial institutions, relaxation of interest rate, and removal of obstacle on contest among financial players (Maria-Lenuţa, & Daniela-Georgeta, 2013). By enhanced risk sharing among the intermediaries from foreign countries and local intermediaries, financial liberalization led to better financial advancement (Henry, 2000a). It proved that a better risk sharing could lower the capital cost and therefore encourage further investment and increased the investment level (Bekaert & Harvey, 2000; Henry 2000b), yet it could also lead to more riskier investment which generated higher return (Bekaert, Harvey and Lundblad, 2005). Therefore, financial liberalization was linked with flexibility in financial where the effectiveness of capital can be superintendent and reallocated.

According to Paudel and Jayanthakumaran (2009), raising the savings and investment that required for economic growth was one of the main objectives for financial liberalization. This objective could be achieved by enhancing the monetary transmission mechanism. A financial system should be open in order to achieve this and it must have the main elements predetermined by the market. This was due to increases of real interest rate tend to increase savings and led to increase in investment (Reinhart & Tokatlidis 2001; Laeven 2003). However, the financial liberalization's major objective was argued by some researchers (Shaw, 1973; McKinnon, 1973). They argued the major objective was to raise the supply and enhanced the allocation of funds for investment in order to boost the national economy. They mentioned that the elimination of interest rate ceilings should stimulated savings and gained real interest rates. In turn, more investment in the economy will be promoted due to more savings and hence led to a better financial and economic performance.

Based on Ang and McKibbin (2006), financial liberalization is widely known as an essential part of financial sector development. Therefore, policies such as dismantling the controls of interest rate and other boundaries on the operations of banking may have significant implications for financial development and thus growth of economic. Financial system may be deepened or financial fragility may occured due to financial liberalization. However, from both theoretical and empirical perspectives, it is ambiguous for the benefits on the economy in long-term. Ang and McKibbin (2006) stated that as referred to the McKinnon-Shaw, financial deepening may be hampering by the restriction that the government imposed on the financial system operations for examples high reserve requirement, direct credit programs and ceiling of interest rate. In turn, this may has an effect on the quantity and quality of investment and slow down the financial systems development (Rossi, 1999; King & Levine, 1993b; Pagano, 1993; McKinnon, 1973; Shaw, 1973). Therefore, the financial repression paradigm of McKinnon–Shaw concluded that economic growth was negatively affected by financial system with poorly functioning. Furthermore,

King and Levine (1993b) who had developed the financial endogenous growth reported that financial repression may come along with an impact which negatively affected financial development.

According to Cubillas & Gonzalez (2013), although there were many studies stated that financial liberalization had positive effect on the financial instability through increasing bank competition, however there was an argument on the empirical relationship between financial instability and bank competition (Berger *et al*., 2009). Based on few researches, they concluded that more bank competitions following liberalization hit banks charter value and decreased their incentives to behave prudently, this situation known as the traditional "competition-fragility" view (Repullo, 2004; Hellmann *et al*., 2000; Keeley, 1990). Yet, this traditional view had been challenged by a "competition-stability view". According to Boyd and De Nicolò (2005), the "competition-stability view" suggested that if bank charged lower interest rate to borrowers due to high bank competition, it may lower down the bank risk and reduce their incentives to invest in riskier projects. On the other words, presence of bank competition would lend a hand on the financial stability through liberalization. In short, financial liberalization caused a negative consequence on the twin crises but improve financial stability. This statement has been supported by Lee, Lin and Zeng (2016). There was another proven from Lartey and Farka (2011), stated that liberalization dedicated to financial system with higher growth by reducing financing constraints and strengthening resource allocation. This study also mentioned about excessive risk-taking generated by financial liberalization may cause financial crises.

Demirgic-Kunt and Detragiache (1998), Cole and Slade (1998), and also Kamisky and Reinhart (1999) stated that banking instability could be due to the reason of financial liberalization. Demirgic-Kunt and Detragiache (1998) by using the data collected from 53 countries which included Malaysia for the period of 1980-1985, they put it into a more variables logit framework and determined practically the

connection between banking instability and financial liberalization. They defined that instability of banking was more apparently to take place in liberalized financial systems. The circumstances traced the total of substances such as unfavourable macroeconomic improvement, deficiency economic procedures as being the additional possible independent variables.

2.2 Concept of Theory Model

Based on other researches, the removal of government regulatory controls would give a crowd of advantages which would increase economic growth which reliability to financial liberalization; among them, provide better quality and action of the product innovation, financial system and reduced prices. Nevertheless, in the last three decades, we have noticed the traps that a liberalization could raise the consumption of credit to buy assets and finance economic, asset cost inflation, changeable and morally weak in financial.

The four classifications of capital accounts are total holdings of securities equity investment, bank borrowing, foreign direct investment and portfolio bond investment. These four categories can be collected under the two large categories of claims and liability. Henry (2008) said that claims flows include, foreign direct investment and equity portfolio streams, while liability flows normally involve bond money resources, commercial financial system borrowing or authorized funding by governments or other. For instances, the authorized organization such as the World Bank and IMF provided this type of monetary resources. The person who is in debt or under financial obligation must return the fair value of the loan, addition the interest

in spite of its own economic condition. Consequently, a liberalized stock market promotes foreign direct investment and equity portfolio.

2.3 Theoretical Framework

Liberalization is the mean as a transformation from regulatory controls and direct policy to market which convey behavior to resources allocation and price setting. Financial liberalization used in the research refers to the methodical removal of structures, regulatory controls, and operational guidelines. Sulaiman, Oke and Azeez (2012); Ahmed (2013); Akingunola, Adekunle, Badejo and Salami (2013); Nwadiubu, Sergius, and Onwuka (2014) stated that the hypothesis of McKinnon-Shaw affirms that financial liberalization is served as a fundamental for the growth of economic and it shows banks assign credit prohibited and hoped for the productivity of the investment projects referring to perceived risks of default and transaction costs. Furthermore, the quality of name, collateral, covert benefits to loan officers and political pressures also act as main character for the loans placement. As a result, it decreases the approximately investment as the loan rate ceiling. It is quite low due to the reason that investment which previously gives lower returns is now changes to become beneficial. Such situation happens when interest rates are located too low, therefore concluding in credit rationing. Mckinnon and Shaw's (1973) also argue that financial repression diminishes the real financial system size and the real growth relative to non-financial magnitudes. Moreover, the financial repression strategy resulted the development process to be stopped.

Interest rates are said to be held below the competitive levels under a repressed financial system. The savings and investment become lower due to this

effect. Besides, it also results a high disparity between the borrowing and lending rates which lead to a lower business volume. Financial liberalization is believed to enable the market to eliminate away all institutional interest rates in order to rectify all the non-market disparities. By this action, higher incentives for savings will be provided and the new financial instruments designing will be promoted. Besides, it also increases the interaction among economic agents. Ultimately, it will improve the risk-sharing opportunities. Therefore, it is considered that the financial institutions may have an increase in funds volume and thus improve the efficiency of capital accumulation by growth in productivity. Hence, financial markets liberalization is expected to cause financial deepening.

Gamra (2008) stated that financial market liberalization provided a new channel for the entry of foreign capital. Inflow causes the appreciation of real exchange rates, rapid bank lending expansion and increase vulnerability to a reversal in capital inflows. In late 1996 and early 1997, the reduce in capital inflows causes financial crises marked by non-performing loans dramatically increase, weaker bank balance sheets, decline in quality of investment and a deep economic contraction. Based on the experience of emerging Asian countries, it determined that a mixed blessing is existed in financial liberalization. Individual countries could finance productive investment and smooth consumption through international borrowing.

Economic liberalization is refers to the those elements that commonly will bring an effect to the business throughout the country such as taxation, regulations, trade and others are opened up to the world. Liberalized in a country could bring a positive economic effect to investors and also the country. Generally, the level or degree of liberalized economically within a country could be easily determined by the easiness to operate a business and easiness to have investment in that country. The liberalization process had already been practised by all developed countries and many

researches were also done based on developed countries. Thus, we focus on a developing country which is Malaysia in our research.

Generally, economic liberalization is considered as a process that desirable and beneficial for a nation. It carried a goal to enable the capital to flow in and out without restriction so that it could spur growth and ensure efficiencies in the home country. Following liberalization, the investors will have greater incentive and interest to invest in that country due to the new opportunities provided for diversification and profitable. Furthermore, in a liberalization country, the values of stock market will raised. Since investors and fund managers are always seeking for new opportunities to become profitable, therefore it may causes capital to flow into the country due to the availability to make investment. In short, capital account liberalization and other financial sector is having relationship of the process which exist to be closely connected to the overall economic level.

2.4 Chapter Summary

This chapter reviewed the other studies and explained the relationship between the capital account and equity market liberalization. The theory behinds the liberalization and economic growth are described in this chapter. However, the method used to determine the relationship of variables in our study will be discussed in next chapter.

CHAPTER 3: METHODOLOGY

3.0 Introduction

In Chapter 3, our data will be decided to link with the econometric ideal and scheme. To attain the objectives of the research, numerous actions and accomplishments need to be collected and evaluated. In consequence, our model is created depended on theoretical framework and will be explained more in this topic. There is short term and long term connection associated with Malaysia economic development (explanatory variable) and five others predictor variables which included government consumption, inflation, population growth, trade and private credit are examined in the model. We have attained principals for all of our data ranging from years 1970 until 2014 which consist of full data size in sum of 45 years.

To run the econometrics techniques or ways in this chapter, application of the theory in configuration originated based on Granger (1981), designed by Granger and Weiss (1983) and extended by Eagle and Granger (1987). Descriptions behind the cointegration are about long term condition being related surrounded by continuous time interval. Cointegration analysis is a single time series cannot be cointegrated, known as inherently multivariate (Hendry and Juselius, 2000). Therefore, our regression models are multivariate in nature as to study effect of various regressors (independent variables) on regressand (dependent variable). To analyze our model, we approach the Generalised Method of Moments (GMM) and Autoregressive Distributed Lags Bound Testing (ARDL Approach).

After experiment with the short term and long term connection with one on either side of the variables, we further examined the short term relationship between those variables by using Granger Causality. Before cointegration tests are carried out, the 3 tests are deployed to test the stationarity such as unit root tests, Augmented Dickey Fuller (ADF) test follow by Ng-Perron Modified (NP) test. Stationarity tests are needed to ensure our series of data meet the necessity of integration in same order with I (d) and constructed from a set of variables by multiplying each variable by a constant must be I (d-b).

Theoretical model will be explained in the first section of this research. Next, the data description will be reported on where the data is extracted and its features as well as descriptive statistic. Moreover, the unit root test follow by econometric method with Bound Test, Granger Causality test and GMM.

3.1 Theoretical Model

$$GDP_t = \beta_0 - D1_t + D2_t - GOV_t - INF_t - POP_t + TRAD_t + CRED_t + \mu_t \quad (1)$$

where GDP stands for gross domestic product per capita; D1 is dummy of capital account liberalization; D2 is dummy of equity market liberalization; GOV represents government expenditure/GDP; INF represents inflation; POP represents population growth; TRAD represents trade; CRED represents private credit; and μt reflects the external factors that affect the regressand (dependent variable); and β_0 is the economic environments.

Refer the equation (1) above, it presents the connection between the regressand, GDP and the regressors, capital account liberalization, equity market liberalization, government expenditure, inflation, population growth, trade, and private credit. Correspondingly to alternative researchers, they have consisted some other independent variables into their core which are powerful to the growth of economic internally or externally of the financial liberalization being practiced.

According to several researches recently, the research workers had involved liberalization such as social area, political area and economic policy area. According to some frameworks, this development or theory of the circumstances of production was being analyzed as well. For instances, we expect the capital account liberalization has negative relationship to the Malaysian economic growth since there were many researchers showed the negative effect in a developing country, refer (Eichengreen, Gullapalli and Panizza, 2011). However, we expect the equity liberalization showed a positive effect to the growth as mentioned in (Bekaert *et al*., 2005).

In addition to that, we expect Trade also significantly positive to GDP (Ranciere *et al*., 2006 and Munir *et al*., 2013), same goes to private credit (Braun and Raddatz, 2007; Gamra, 2009). However, inflation, population growth and government/GDP is significantly negative to the economic growth (Goh, Alias and Olekalns, 2003; Honig, 2008; Bekaert *et al*., 2006; Braun and Raddatz, 2007; Ahmed, 2013; Bumann *et al*., 2013 and Kunieda *et al*., 2014).

3.2 Data Sources

This study had included the statistic from year 1970 to year 2014 which hold the facts about the capital liberalization and equity liberalization in Malaysia. The data is come together from World Bank Development Indicators, International Monetary Fund (IMF) Annual Report on Exchange Arrangement and Exchange Restrictions (AREAER), and Bekaert and Harvey (2002). An arrangement of events in the order of main monetary, financial, economy and political matters in turn up markets. World Development Indicators (WDI) which assisted almost all present and precise global development data which is the primary World Bank collection of development indicators, gathered from officially-recognized international sources; IMF is the international financial institution which included the information and knowledge in economic and finance area; Bekaert and Harvey (2002)'s chronology supported the primary economic area and issues of political along with the collection of periods for a number of countries. Data is acquired to decide the connection between economic growth and financial liberalization.

3.2.1 Definitions of Variables

Variable	Proxy	Description
D1	IMF capital account openness indicator	The action of openness capital account is by employing the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). If the nation consist minimum one restriction in the classification of ''payments restrictions for the account of capital performance'', the openness capital account sign takes on value of zero. *(in natural logarithm Ln)*
D2	Official equity market liberalization indicator (Official Liberalization)	The moment to put money into internal equity financial instruments is corresponding to a period of formal regulation replace after officially foreign investors. Official Liberalization periods are according to Bekaert and Harvey (2002) A Chronology of Important Financial area, Economic area and Political Issues area in advanced nation's economy. For the liberalizing countries, the associated Official Liberalization indicator takes a value of one when the officially equity market is liberalized. Otherwise, it takes a value of zero. *(in natural logarithm Ln)*
GDP	Gross domestic product (GDP) (% of growth rate)	Gross Domestic Product measured as annual percentage that is charged for GDP per capita growth rate and it is depended on fixed local currency. Aggregates are based on fixed 2005 U.S. dollars. *(in natural logarithm Ln)* Source: World Bank Development Indicators.

GOV	Government consumption/ GDP	Government consumption divided by gross domestic product. Percentage growth of general government final consumption expenditure annually is according to the fixed regional or local currency. Financial plans are according to the fixed 2005 United State dollars. All current government expenditures for buys goods and services involve employee's compensation are included in common consumption of government spending. Besides, most output on national defense and security are also included. However, the government military contributions where part of capital of government formation are eliminated. *(in natural logarithm Ln)* Source: World Bank Development Indicators.
TRAD	Trade Openness	The trade is the sum of imports and exports of goods and services measured as GDP per share. *(in natural logarithm Ln)* Source: World Bank Development Indicators.
INF	Inflation	The measurement of inflation can apply by the GDP annual growth rate implicit deflator. The GDP annual growth rate implicit deflator point outs the variation rate of price in the economic. The GDP implicit deflator is assigned to the GDP ratio in present local currency to GDP in the maintained local currency. *(in natural logarithm Ln)* Source: World Bank Development Indicators
POP	Population growth	Annual population growth rate for period t can be explained by the exponential growth rate in the middle of year of the population from time t-1 to t in a percent

		form. The totality growth rate of population includes all citizens followed by lawful status or rights of a citizen. *(in natural logarithm Ln)* Source: World Bank Development Indicators.
CRED	Private credit/GDP	Bank credit to the private sector with the base of GDP. In Malaysia, bank credit is explained as the credit extended by the banking institution, involving monetary authorities and commercial banks. The financial resources such as loan, trade credits, other accounts receivable and non-equity securities purchases are only provided to the private sector. Credit is important in order to ensure the economy to function well. *(in natural logarithm Ln)* Source: World Bank Development Indicators
SCH	Secondary school enrollment	Secondary school enrollment proportion includes the proportion of entirety enrollment, followed by of capacity or age, to the population age group that authoritatively equivalent to the secondary schooling level. Secondary schooling consummates the arrangement of fundamental learning that originated at the primary level and sets up at modeling the foundational lifelong education and growth or progress of humanness, by providing more knowledge or skills with offering more educated instructor or teachers. *(in natural logarithm Ln)* Source: World Bank Development Indicators.
MSG	Money supply growth	Average annual growth rate in money also in quasi money. Money and quasi money (M2) include the sum of medium of exchange or currency in exterior of

		banks, deposits demander, central of governmental and savings, period, currency of foreign exchange savings of citizen and central government. The distinctive in whole end-of-period correspond to the level of M2 in the previous period is used to measure the transform of the money supply. *(in natural logarithm Ln)* Source: World Bank Development Indicators.

3.3 Rationale behind Choosing Our Proxies

3.3.1 Gross Domestic Product per Capita (GDP)

GDP is a substantially analysis to figure whether the country is practicing growth or advancement and to support facts of the economy size (Callen, 2012). According to Blanchard and Johnson (2013), GDP is described as the overall cost of goods made and helps supplied in a country all along a year. GDP is an essential economic tool because it is able to undertaking the related resources and wealth of distinctive countries and the overall development or recession of a country's economy in just one amount. Hence, GDP is still a good indicator as the measure for economic growth. There are plenty of macroeconomics determinants which will decide the significance of GDP, yet we determine to core our research study on 7 independent variables which included two dummies in the model and examine the connection between them.

We have chosen Gross Domestic Production (GDP) per capita as our dependent variables for Malaysian economic growth as it has excluded the effect of

inflation. Thus, it is more exact to be applied as an indicator as compared to nominal GDP which is not adjusted for inflation.

3.3.2 Government Consumption (GOV)

By using the government final consumption expenditure as our independent variables because it influences the act of earnings account on national account which standing or acting as the expenditure of government on goods and services that are helped for the direct enjoyment of individual needs (individual consumption) or a group of members in the community needs (group consumption).

In other word, government expenditure consists of consumption acquired by government in its making of non-market and market goods and services served in kind of hostile to society transfer. The whole common government final expenditure or consumption is possibly of little political condition, from a fiscal area, than common government expenditure but it is significance as an element of entire GDP per capita which is the dependent variables used.

3.3.3 Inflation (INF)

Inflation stands for the money supply development or price levels growth. Normally, inflation acts as the effect in prices compared to some measurements or benchmarks. We are likely to hear the terms inflation in many places because it is often and important factor in economic world to reflect the GDP. It is significance to

take attention on GDP figures (which is known as dependent variable) where inflation acts as one of the determinants for economic growth.

3.3.4 Population Growth (POP)

According to statistics and data from the World Bank, the writer discovered that the growth rate of a capita GDP is continuously relying upon population development which included both the youthful and elders dependency percentages and the mortality ratio. Plus, they want to discover whether the percentage of population development and youthful dependency ratio is smaller than 1.2 percent each year.

The effect of population development on the boost of GDP per capita is continuous and linear in form. It is capable when interaction terms are involved in the measurement ideal. In developed countries, governments can control population growth in spite to encourage growth. Neither the status of urbanizing nor urban improvement has a statistically importance force on GDP per capita growth. It can be due to the fact that the population growth gives positive or negative effects on economic boost.

3.3.5 Trade (TRAD)

As trade acts as an essential aspect in the economy expansion of any country. Malaysia also exports a lot of products to other countries and imports the capital

goods from other countries. Therefore, it is crucial variable to test for the economic development of a country which has involved in trade and to get more benefits from international trade in the form of human capital growth and build up economic accumulation.

3.3.6 Private Credit (CRED)

In Malaysia, bank credit is explained as the credit extended by the banking institution, involving monetary authorities and commercial banks. The financial resources such as loan, trade credits, other accounts receivable and non-equity securities purchases are only provided to the private sector. Credit is important in order to ensure the economy to function well. Both security of creditor through the lawful structure and information-sharing association are established with higher percentage of private credit to GDP.

Based on latest research, the growth of private credit markets across countries is relevant act towards associations, such as lawful protection of investor, in supporting these markets (La Porta et. al, 1997; Jappelli and Pagano, 2002). In specific, banks are more apparently to undertaken voluntary share negative information. Therefore certain private credit authority typically works with negative knowledge only. Some private credits also encompassed negative data only. Nevertheless, there are doubtfully importing the benefits to sharing both positive and negative result.

3.3.7 Secondary School Enrollment (SCH)

Schooling considers as the most significant circumstance of human capital stock. According to researcher Barro (1991), the human capital in the particular form of school enrollment had positive connection with a capita of real GDP. We use the secondary school enrollment as other variables in GMM to determine whether the long-term influences the growth of education institution attendance on development of economic and individual welfare. Furthermore, the effect of enrollment proportion and the relevance of schooling for improvement can be substitute the progress of schooling as the most significance issues on economic growth conditions.

The transformation of education varies with diversification in the level of expansion or improvement. Some of the studies indicated that the result of secondary school enrollment on economic development is greater in OECD and developed countries. Schooling has been located largely in a total of studies due to its significance in the advancement of economy. Since many viewers from education might contribute to economic development, therefore we are using these variables to see the effect on it.

3.3.8 Money Supply Growth (MSG)

According to researcher Liang (2011), the transforms of money supply caused the interest rates gave impacts on the economy which guiding to greater expenditure and lending or borrowing progress. In the short run, this should correspond to a raise in sum of consumption and spending and, likely, GDP. The long-run effects of rise in the supply of money are much more challenging to forecast. Furthermore, it is

probable fund or money is not misplacement, and the only long run effect is greater prices than buyers basically would have met. Furthermore, growth of economic production raised the distribution of money value since a unit of money can afterwards became more beneficial goods and services. Thus, economic growth has a natural deflationary effect, even if the supply of money does not actually shrink.

3.4 Econometric Method

As our research focuses solely on Malaysia, we employed time series method to run our proposed model, time series analysis is also capable in showing different patterns or components in the dataset which are known as seasonal component, trend component, irregular component and cyclical component. Our research paper serves to study the impact of financial liberalization on Malaysian economic growth and development of financial system.

We employed three time series approaches, Bound Test, Granger Causality test, and GMM to explore the short run and long run effect connection between our variables. Before we examine our model with bound test, we need to test our model by using unit root test to decide whether our variables are stationary or not with ADF and NP test. The explanation of these approaches will be discussed right after this.

3.4.1 Unit root test

According to Gujarati and Porter (2009), unit root test is a stationarity test. The beginning point is the unit root (stochastic) analysis.

$$Y_t = \rho Y_{t-1} + \mu_t \qquad -1 \leq \rho \leq 1 \qquad (2)$$

where μ_t is a white noise error term.

If ρ=1, the equation (2) becomes a random walk model without drift which is explained as non-stationary stochastic process. Therefore, the Y_t is regressed on its (one-period) lagged value Y_{t-1} and figure out whether the estimated ρ is statistically equal to 1.

However, equation (2) cannot be estimated by OLS and cannot test the hypothesis that ρ=1 by using the usual t test due to severely biased of that test in the case of a unit root. Therefore, equation (2) is manipulated by subtract Y_{t-1} from both sides to obtain:

$$\begin{aligned} Y_t - Y_{t-1} &= \rho Y_{t-1} - Y_{t-1} + u_t \\ &= (\rho - 1) Y_{t-1} + u_t \end{aligned} \qquad (3)$$

which can be alternatively written as:

$$\Delta Y_t = \delta Y_{t-1} + u_t \quad (4)$$

where $\delta = (\rho\text{-}1)$ and Δ is the first difference operator.

In practice, equation (4) is estimated instead of equation (2). Test the (null) hypothesis that $\delta = 0$, the alternative hypothesis being that $\delta < 0$. If $\delta = 0$, then ρ=1, there is a unit root, which means the time series is considered non-stationary.

For equation (4), we estimated whether the estimated slope coefficient in this regression $\hat{\delta}$ is 0 or not. Y_t is non-stationary if it is 0. If it is negative, Y_t is stationary.

There are two types of tests to determine the stationary of the times series data which is ADF and NP. These two methods are commonly used by the researchers to test the stationary of the time series data. ADF test is the new version of the Dickey-Fuller (DF) test for the set of time series models which the data size is larger and more complicated compare to Dickey-Fuller test.

3.4.1.1 Dickey-Fuller (DF) Test

DF test which had named by D. A. Dickey and W. A. Fuller since 1979. DF test is developed to test the existing of unit root within an auto regression model. The lagged number of the variable is determined by information captured in Akaike

Information Criterion (AIC) and Schwartz Information Criterion (SIC). Unit root and the trend status of the regression model can be determined by using the Schwarz Information Criterion (SIC).

3.4.1.2 Augmented Dickey-Fuller (ADF) Test

According to Gujarati and Porter (2009), error term (u_t) was assumed to be uncorrelated in DF test. ADF is extended from the DF test to suit the case where (u_t) was correlated. In order to conduct ADF test, the three equations preceding is "augmented" by increasing the lagged values of the dependent variable. An ADF test is used to study whether stationary is existed in the time series data. Besides, it is also a test which specially used to investigate for a unit root within a time series sample. DF test is a test that used for an auto regression model which is greater and more complicated. In Eviews 6, there is an option that naturally chooses the lag length based on Akaike, Schwarz, and other information and knowledge principle. The information captured for AIC and SIC is used to determine lag length. During ADF test, take note of the three assumptions. Determination of lag length for the regression becomes the main problem when using the ADF test. The study demonstrates an insignificant result due to bias and spurious if the regression's lag length is too large. Generally, negative number is showed by the statistic number for the ADF test. In other words, it indicates that the smaller the ADF number, the greater the probability to reject the hypothesis of there is occur unit root at some confidence level. The null hypothesis is given as below:

H0: Has unit root (Non-stationary)

H1: No unit root (Stationary)

For the ADF test, there are few types of test equations (Zarenejad, 2012):

a) When the time series is in flat level and conceivably slow-turning around zero. The minimum AIC and minimum SIC are brought to analysis the figure of augmenting lags. Time trend or intercept are absent in this test equation. This is known as Dickey-Fuller t-statistic.

$$\Delta X_t = \theta X_{t-1} + \sum_{i=1}^{m} \phi_i \Delta x_{t-i} + \mu_t \quad (5)$$

b) When the time series is in flat level and conceivably slow-turning around non-zero value. This analysis equation consists of an intercept but without time trend. The minimum AIC and minimum SIC are used to determine the number of augmenting lags. The stationary of the time series data is determined by the t-statistic.

$$\Delta X_t = \alpha_0 + \theta X_{t-1} + \sum_{i=1}^{m} \phi_i \Delta X_{t-1} + \mu_t \quad (6)$$

c) When the time series has a trend (either up or down) and is conceivably slow-turning around a trend line you would draw through the data. This test equation consists of time trend and intercept. The minimum AIC and minimum SIC are used to determine the number of augmenting lags.

$$\Delta X_t = \alpha_0 + \alpha_1 t + \theta\theta X_{t-1} + \sum_{i-1}^{m} \phi_i \Delta X_{t-1} + \mu_t \quad (7)$$

As referred to Gujarati (2003), when the t-statistic is larger than the critical value, the hypothesis for Dickey-Fuller on unit root will be rejected. In other words,

when the null hypothesis in ADF test is not rejected, the unit root is indicated to be existed in the time series data.

3.4.1.3 Ng-Perron Modified (NP)

The Ng and Perron (2001) unit root test is a modified version of previously existing tests, incorporating a Generalised Least Square (GLS) detrending method and a modified information criterion for the lag length selection. M-tests of Ng and Perron (2001) are an extension of the ERS to the modified Z tests and developed in Perron and Ng (1996). By using GLS and using MIC for lag length selection, Ng and Perron indicated that size adjusted power properties of the tests increase significantly. They showed using Monte Carlo experiments that even in the case of DF-GLS developed by ERS, if lag length is selected using MIC, the power improvements are significant especially once there are MA terms in the underlying DGP.

Ng and Perron suggested using GLS detrended data in the autoregression for long run variance that used in statistic of Perron and Ng. There exists higher power when using the GLS detrended data for long run variance estimation. They discovered using simulation studies that for most 'practical' ARMA cases even though $\text{DF-GLS}_{\text{MIC}}$ outscores MZ_{MIC} on power, on the size criterion it is the other way round.

$$\Delta y_i^d = \alpha + b_0 y_{t-1}^d + \sum_{j=1}^{k} b_j \Delta\, y_{t-j}^d + \varepsilon_t \qquad (8)$$

Without going deep into the details, MIC is basically a modification of AIC which depends upon the sample value of the parameter (b_0) tested under null and the sample size. For lag *k* and sample size *T* and the value of the coefficient on y_{t-1} (b_0),

MIC is given as:

$$MIC(k) = \ln(s^2) + \frac{2(r(k)+k)}{T - k_{max}}$$

$$r(k) = (s^2)^{-1}\widehat{b_o}^2 \sum_{t=k_{max}+1}^{T} y_{t-1}^2 \; and \; s^2 = (T - k_{max})^{-1} \sum_{t=k_{max}+1}^{T} \widehat{\varepsilon_t^2} \qquad (9)$$

are to be obtained from the autoregression as shown in above. Note that the y_t here denotes the appropriately GLS de-meaned / detrended data which is not the original time series. However, Ng and Perron found that the three M-tests were alike in term of the characteristics of theoretical and numerical.

3.4.2 Bound Testing (Autoregressive Distributed Lags Approach)

According to Pesaran, Shin, and Smith (2001), autoregressive distributed lag (ARDL) is a single equation-based cointegration method to analyse the short term dynamics and long term connection among the variables. Many studies have been proposed bound test into their researches because it was strong to endogeneity problems and can be estimated by ordinary least square (OLS) model (Hasanov & Huseynov, 2013; Jalil, Feridun, & Ma, 2010; Pesaran & Shin, 1999). The other advantages of this approach are the outcomes are more accurate when the sample size

is small and it can also be applied to the model in spite of whether the underlying variables are I(0) or I(1) (Pesaran *et al*., 2001). The vector autoregression (VAR) of order *p*, denoted VAR (*p*), formulated as:

$$Z_t = \mu + \sum_{i=1}^{p} \beta_i z_{t-i} + \varepsilon_t \tag{10}$$

where z_t is the vector of both x_t and y_t , where y_t is the dependent variable defined as GDP, x_t is the vector matrix which stand for a set of independent variables (GOV, INF, POP, TRA, and CRED) and *t* is a time or trend variable. According to Pesaran *et al*. (2001), y_t must be I (1) variable, but the x_t can be either I (0) or I (1). We further developed a vector error correction model (VECM) in general as follows:

$$\Delta z_t = \mu + \alpha t + \lambda z_{t-1} + \sum_{i=1}^{p-i} \gamma_t \Delta y_{t-1} + \sum_{i=1}^{p-1} \gamma_t \Delta x_{t-1} + \varepsilon_t \tag{11}$$

where Δ is the first-difference operator. The long-run multiplier matrix λ as:

$$\lambda = \begin{bmatrix} \lambda_{YY} \lambda_{YX} \\ \lambda_{XY} \lambda_{XX} \end{bmatrix}$$

The diagonal elements of the matrix are unrestricted, so the selected series can be either I (0) or I (1). If $\lambda_{YY} = 0$ then *Y* is I (1) whereas if $\lambda_{YY} < 0$ then *Y* is I (0).

The VECM procedures described above are imperative in the testing of at most one cointegrating vector between y_t and x_t. To derive model, we followed the

postulations made by Pesaran *et al*. (2001) in Case III, that is, unrestricted intercepts and no trends. After imposing the restrictions $\lambda_{YY} = 0, \mu \neq 0$ and $\alpha = 0$, the GIIE hypothesis function can be stated as the following unrestricted error correction model (UECM):

$$\Delta(GDP)_t = \beta_0 + \beta_1(GDP)_{t-1} + \beta_2(GOV)_{t-1} + \beta_3(INF)_{t-1} + \beta_4(POP)_{t-1} + \beta_5(TRA)_{t-1}$$
$$+ \beta_6(CRED)_{t-1} + \sum_{i=1}^{p} \beta_7 \Delta(GDP)_{t-i} + \sum_{i=0}^{p} \beta_8 \Delta(GOV)_{t-i} + \sum_{i=0}^{p} \beta_9 \Delta(INF)_{t-i} + . \sum_{i=0}^{p} \beta_{10} \Delta(POP)_{t-i}$$
$$+ \sum_{i=0}^{p} \beta_{11} \Delta(TRA)_{t-i} + \sum_{i=0}^{p} \beta_{12} \Delta(CRED)_{t-i} + \varepsilon_t \qquad (12)$$

where Δ is the first-difference operator and ε_t is a white-noise disturbance term and *p* is lag length. From the estimation of UECMs, the long-run elasticises are the coefficient of one lagged explanatory variable (multiplied by a negative sign) divided by the coefficient of one lagged dependent variable (Bardsen, 1989). Subsequently, the number of regressors in the UECM model would be reduced considerably by applying the Hendry's general to specific approach. For example, in equation (12), the long-run inequality, investment and growth elasticises are (β_2 / β_1) and (β_3 / β_1) and so forth respectively. The short-run effects are captured by the coefficients of the first-differenced variables in equation (12).

After regression of Equation (12), the Wald test (*F*-statistic) was computed to differentiate the long-run relationship between the concerned variables. The Wald test can be carry out by imposing restrictions on the estimated long-run coefficients of economic growth, inequality, investment and public expenditure. The null and alternative hypotheses are as follows:

$H_0 = \beta_1 = \beta_2 = \beta_3 = 0$ (No long-run relationship)

$H_1 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq 0$ (Long-run relationship exists)

The computed *F*-statistic value will be evaluated with the critical values tabulated in Table CI (iii) of Pesaran *et al.* (2001). According to these authors, the lower bound critical values assumed that the explanatory variables x_t are integrated of order zero, or I(0), while the upper bound critical values assumed that x_t are integrated of order one, or I(1). Therefore, if the computed *F*-statistic is smaller than the lower bound value, then the null hypothesis is not rejected and we conclude that there is no long-run relationship between GDP and its determinants. On the other side, if the computed *F*-statistic is greater than the upper bound value, then GDP and its determinants share a long-run level relationship. However, if the computed *F*-statistic falls between the lower and upper bound values, then the results are inconclusive.

3.4.3 Granger Causality Test

Causality tests are about to state that Y is a cause of X if X is able to be explained by the history of Y. This model is conducted with X as the dependent variable while the explanatory variables include lagged X and Y. If the estimated coefficient of Y is significant then X is the reason of Y, otherwise it does not cause X. The same model implemented where Y becomes the dependent variable.

Therefore, the following equations are made to test the causality between economic growth and the independent variables from our model:

$$\Delta \ln GDP_t = y_1 + \sum_{i=1}^{m} \lambda_{1i} \Delta GDP_{t-i} + \sum_{j=1}^{m} \delta_{1j} \Delta GOV_{t-j} + \sum_{j=1}^{m} \theta_{1j} \Delta INF_{t-j} + \sum_{j=1}^{m} \varphi_{1j} \Delta POP_{t-j} + \sum_{j=1}^{m} \omega_{1j} \Delta TRAD_{t-j} + \sum_{j=1}^{m} \varrho_{1j} \Delta CRED_{t-j} + \mu_{1t} \quad (13)$$

$$\Delta \ln GOV_t = y_2 + \sum_{i=1}^{m} \delta_{2i} \Delta GOV_{t-i} + \sum_{j=1}^{m} \lambda_{2j} \Delta GDP_{t-j} + \sum_{j=1}^{m} \theta_{2j} \Delta INF_{t-j} + \sum_{j=1}^{m} \varphi_{2j} \Delta POP_{t-j} + \sum_{j=1}^{m} \omega_{2j} \Delta TRAD_{t-j} + \sum_{j=1}^{m} \varrho_{2j} \Delta CRED_{t-j} + \mu_{2t} \quad (14)$$

$$\Delta \ln INF_t = y_1 + \sum_{i=1}^{m} \theta_{3i} \Delta INF_{t-i} + \sum_{j=1}^{m} \lambda_{3j} \Delta GDP_{t-j} + \sum_{j=1}^{m} \delta_{3j} \Delta GOV_{t-j} + \sum_{j=1}^{m} \varphi_{3j} \Delta POP_{t-j} + \sum_{j=1}^{m} \omega_{3j} \Delta TRAD_{t-j} + \sum_{j=1}^{m} \varrho_{3j} \Delta CRED_{t-j} + \mu_{3t} \quad (15)$$

$$\Delta \ln POP_t = y_1 + \sum_{i=1}^{m} \varphi_{4i} \Delta POP_{t-i} + \sum_{j=1}^{m} \lambda_{4j} \Delta GDP_{t-j} + \sum_{j=1}^{m} \delta_{4j} \Delta GOV_{t-j} + \sum_{j=1}^{m} \theta_{4j} \Delta INF_{t-j} + \sum_{j=1}^{m} \omega_{4j} \Delta TRAD_{t-j} + \sum_{j=1}^{m} \varrho_{4j} \Delta CRED_{t-j} + \mu_{4t} \quad (16)$$

$$\Delta \ln TRAD_t = y_1 + \sum_{i=1}^{m} \omega_{5i}\, \Delta \mathrm{TRAD}_{t-i} + \sum_{j=1}^{m} \lambda_{5j}\, \Delta \mathrm{GDP}_{t-j} + \sum_{j=1}^{m} \delta_{5j}\, \Delta \mathrm{GOV}_{t-j} + \sum_{j=1}^{m} \theta_{5j}\, \Delta \mathrm{INF}_{t-j} + \sum_{j=1}^{m} \varphi_{5j} \Delta\, \mathrm{POP}_{t-j} + \sum_{j=1}^{m} \varrho_{5j} \Delta\, \mathrm{CRED}_{t-j} + \mu_{5t} \quad (17)$$

$$\Delta \ln CRED_t = y_1 + \sum_{i=1}^{m} \varrho_{6i}\, \Delta \mathrm{CRED}_{t-i} + \sum_{j=1}^{m} \lambda_{6j}\, \Delta \mathrm{GDP}_{t-j} + \sum_{j=1}^{m} \delta_{6j}\, \Delta \mathrm{GOV}_{t-j} + \sum_{j=1}^{m} \theta_{6j}\, \Delta \mathrm{INF}_{t-j} + \sum_{j=1}^{m} \varphi_{6j} \Delta\, \mathrm{POP}_{t-j} + \sum_{j=1}^{m} \omega_{6j} \Delta\, \mathrm{TRAD}_{t-j} + \mu_{6t} \quad (18)$$

Eq. (13) in which GDP is a function of its own lags and the lags of other variables (GOV, INF, POP, TRAD, and CRED) tests whether those variables causes GDP by analyzing the individual and joint significance of the estimated coefficients of lags of the variables. On the other hand, Eq. (14) tests whether GDP and other independent variables causes the GOV, which is same as Eq. (13). From Eq. (15) to Eq. (18), they are also test for the causality relationship between GDP and those independent variables which are INF, POP, TRAD and CRED respectively. The individual and joint significance of the lags is tested via the Wald coefficient restriction, thus, if the estimated coefficients of the respective lags are either individually or jointly significant then causality is proved and the reverse also holds.

3.4.4 Generalized Method of Moments (GMM)

GMM is a methodology for dynamic panel data by Arellano and Bover (1995) and Blundell and Bond (1998). This approach allows the researcher to handle the problem of simultaneity or reverse causality plus it is more suitable in the estimation of growth models for dynamic panel data (Arellano & Bond, 1991). Based on Hungarian statistical review, the generalized method of moments (GMM) is the tool intended to be focus on the model that has parametric and nonparametric components. By inserting the data into GMM model, allows the reader be familiarizing with the major concepts behind the research, we will use the estimation method and the properties of the GMM model to run the test. The reason that GMM is being used is because GMM estimators can gives a specific framework for reflecting matters of statistical process as it enclosed many evaluation of interest in econometrics. Furthermore, it can support a calculation that is suitable procedure for the nonlinear dynamic models estimation with non-fully specification of the probability distribution of the result.

The framework to analyze the impact of Financial Liberalization on economic growth in Malaysia is presented in the equation below:

$$GDP_t - GDP_{t-1} = (\alpha_1 - 1)GDP_{t-1} + \alpha_2 D1_t + \alpha_2 D2_t + \alpha_3 GOV_t + \alpha_4 INF_t + \alpha_5 POP_t + \alpha_6 TRAD_t + \alpha_7 CRED_t + X_t\beta + \mu_t \quad (19)$$

where t represent time, μ is an error term. The system of GMM is not strictly exogenous y_{t-1} but pre-determined and can regard $y_t - y_{t-1}$ as the average growth rate in the t^{th} period. Furthermore, X is the set of control variables including a constant.

In order to prevent the bias in OLS estimation from the Eq. (19), such as the problem of correlation between error term and lagged dependent; and correlation between explanatory variables and individual effect, the equation is suggested as Eq. (20), yet it gives another bad impact on the correlation between the lagged dependent and the error term which is $(\Delta y_{t-1}\Delta\varepsilon_t) \neq 0$. Huang *et al*. (2008) stated that Eq. (19) will provide an inconsistent and biased result by OLS. Thus, Arellano and Bond (1991) recommended the following equation (20) in the GMM to overcome the problem from equation (19). Matrix Z_i with X_{it} correlated with individual effect is written as follow:

$$Z_i = \begin{pmatrix} y_{i1} & x_{i1} & x_{i2} & 0 & 0 & 0 & \cdots & 0 & \cdots & 0 & 0 & \cdots & 0 \\ 0 & 0 & 0 & y_{i1} & y_{i2} & x_{i1} & \cdots & 0 & \cdots & 0 & 0 & \cdots & 0 \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & & \vdots & & \vdots & \vdots & & \vdots \\ 0 & 0 & 0 & 0 & 0 & 0 & \cdots & y_{i1} & \cdots & y_{i(t-2)} & x_{i1} & \cdots & x_{i(t-1)} \end{pmatrix} \quad (20)$$

To exploit the moment conditions,

$$E[Z_i'\Delta\varepsilon_i] = 0 \quad for\ i = 1, 2, \dots, N. \quad (21)$$

The asymptotically efficient GMM estimation in Eq. (21) minimizes the criterion.

$$J_N = \left(\frac{1}{N}\sum_{i-1}^{N} \Delta\varepsilon_i'\, Z_i\right) W_N \left(\frac{1}{N}\sum_{i=1}^{N} Z_i'\, \Delta\varepsilon_i\right)$$

Using the weight matrix,

$$W_N = \left[\frac{1}{N}\sum_{i=1}^{N}\left(Z'_i\widehat{\Delta\varepsilon_i}\widehat{\Delta\varepsilon_i}'Z_i\right)\right]^{-1} \tag{22}$$

The $\Delta\varepsilon_i$ are consistent estimates of the first-differenced residuals obtained from a preliminary consistent estimator which is known as two-step GMM estimator. GMM estimator can be obtained in one-step as follow based on the assumption of homoscedasticity v_{it}, the particular structure of the first- differenced model.

$$W_{1N} = \left[\frac{1}{N}\sum_{i=1}^{N}(Z_i'HZ_i)\right]^{-1} \tag{23}$$

where H is a (T-2) square matrix with 2's on the main diagonal, - 1's on the first off-diagonals and zeros elsewhere. Notice that W_{1N} does not depend on any estimated parameters.

The estimation of GMM-SYS is to stack another instrument variable of the first difference to the original level instrument variable matrix (Eq. (20)) as follows:

$$Z_i^+ = \begin{pmatrix} Z_i & 0 & 0 & \cdots & 0 \\ 0 & \Delta y_{i2} & 0 & \cdots & 0 \\ 0 & 0 & \Delta y_{i3} & \cdots & 0 \\ . & . & . & & . \\ 0 & 0 & 0 & \cdots & \Delta y_{i(t-1)} \end{pmatrix} \tag{24}$$

where Z_i is defined in Eq. (20). The difference is only the substitution of Z_i^+ for Z_i on the above matrix.

3.5 Chapter Summary

The direction of this chapter was to describe the research methodology of this study, the data sources, explain the dependent and the independent variables, and provide an explanation of empirical framework used to analyze the data. This section provided a robust link to data analysis. GMM model is carried out to handle the simultaneity or reverse causality problem. Unit Root test is conduct by using ADF and Ng-Perron tools to discover the stationary of series data. Later, ARDL bound test is conducted to examine the short term dynamics and long term connection among the variables. After that, the diagnostic checking is performed to strengthen the significance of the model. The test results will be shown and interpreted in the next chapter.

CHAPTER 4: RESULT AND INTERPRETATION

4.0 Introduction

Chapter 4 will start the interpretation of result generated with two unit root tests, Bound test, Granger Causality test and then Generalized Method of Moments (GMM) test.

The results of unit root tests are shown in Table 4.1; and followed by the bound test and granger causality that were employed to determine the short and long run relationship for the empirical models that presented in Table 4.2 and 4.3 respectively, and the last is the GMM result which presented in Table 4.4.

4.1 Unit Root Test

Augmented Dickey-Fuller (ADF) and Ng-Perron Modified (NP) are used to test the stationarity of data series at level and first difference form by taking the intercept with trend and intercept without trend into account. The results are showed in Table 4.1.

From the result presented in Table 4.1, the level form (intercept with trend) of ADF test is statistically insignificant where the null hypothesis of non-stationary or a unit root is failed to reject at the significance level of 10%, 5% or 1%. Thus, the series

has unit root in level form. However, in first difference form (intercept without trend), t-statistic of all variables are lower than critical values tabulated by MacKinnon (2010) and it is statistically significant to reject the null hypothesis of unit root at 10%, 5% or 1% significance level. Hence, we have enough evidence to conclude that the variables do not have unit root or in the first order of integrated [I (1)]. Since the stationary of all variables are confirmed in first difference, we do not need to proceed to second difference form.

After that, to complement the results of ADF test, we proceed the unit root test with NP test. As expected, the results we obtained from NP test are same as the results in ADF test. We rejected null hypothesis of unit root for all variables in first difference form but do not reject null hypothesis in level form at 10%, 5% or 1% significance level.

As a conclusion, the series have first order of integrated, [I (1)], since we achieved stationary in first difference for all variables but not at level form. In this scenario, we proceed to bound test for short term dynamic and long run relationship.

Table 4.1: Unit Root Test Results

	Augmented Dickey-Fuller		Ng-Perron Modified, MZa	
	Level (Trend and Intercept)	First Difference (Intercept)	Level (Trend and Intercept)	First Difference (Intercept)
GDP	-3.069441	-8.260048***	-6.02950	-42.5235***
	(4)	(1)	(7)	(1)
GOV	-3.032247	-7.875674***	-4.37414	-36.3561***
	(4)	(1)	(9)	(1)
INF	-3.152800	-7.976010***	-10.1724	-17.5360***
	(3)	(1)	(4)	(0)
POP	-2.078814	-4.340629***	0.13535	-46.1632***
	(8)	(1)	(0)	(1)
TRADE	-2.993982	-8.905329***	-8.78780	-47.2889***
	(9)	(1)	(5)	(1)
CREDIT	-1.482968	-5.881938***	-1.68664	-21.1556***
	(0)	(0)	(0)	(0)

Note: ADF and NP are the two tests examine null hypothesis of non-stationary. *, **, *** indicates the rejection of the null hypotheses at 10%, 5%, or 1% significant level respectively. The figures is the test statistic value, the parentheses shows the lag length that automatic selected based on Schwarz Information Criterion (SIC) for both tests.

4.2 Bound Test

After the investigation of ADF and NP test of the stationary status of all variables, we moved forward to the bound test for the estimation of long run relationship between economic growth, government consumption, inflation, population growth, trade and private credit variables.

Bound test allows us to test the existence of a relationship between variables in levels which is applicable irrespective of whether the underlying regressors are purely I(0), purely I(1) or mutually integrated (Pesaran, Shin and Smith, 2001). In addition, in order to get the best fitted specification, we choose the optimal lag length by General to Specific approach.

Acknowledge that the distribution of F-statistic is non-standard even in the case of asymptotic where we have large sample size of data. In the Table 4.2, GDP in first difference form is measured as the dependent variable and the rest of the variables such as government consumption (GOV), inflation (INF), population growth (POP), trade (TRAD) and private credit (CRED) are measured as explanatory variables in our model. In Table 4.2 showed the results of the bounds cointegration test with the null hypothesis and alternative hypothesis as follow:

$$\text{Ho: } \beta_{GDP} = \beta_{GOV} = \beta_{INF} = \beta_{POP} = \beta_{TRAD} = \beta_{CRED} = 0$$

$$\text{H}_1\text{: } \beta_{GDP} \neq \beta_{GOV} \neq \beta_{INF} \neq \beta_{POP} \neq \beta_{TRAD} \neq \beta_{CRED} \neq 0$$

Rejection of null hypothesis indicated a long run relationship. The computed *F*-statistic of GDP is 9.124 which is larger than the upper critical bound value (4.68) at 1% significance level, thus we are able to reject the null hypothesis and conclude

that there is co-integration. Hence, there is the existence of a steady-state long-run relationship among the independent variables of government consumption, inflation, population growth, trade, and private credit with economic growth.

Table 4.2: Bound Test for Cointegration Analysis

	Lags	Computed F-statistic	Decision
GDP	(1, 0)	9.124436***	Cointegration
GOV	(9, 1)	1.851214	No cointegration
INF	(12,2)	0.667961	No cointegration
POP	(5,4)	1.332805	No cointegration
TRAD	(11,1)	1.510749	No cointegration
CRED	(1, 0)	0.719569	No cointegration
Critical Value			
		Lower Bound	Upper Bound
1 % significance level		3.41	4.68
5 % significance level		2.62	3.79
10 % significance level		2.26	3.35

Notes: *, **, and *** indicated 10%, 5%, or 1% level of significance in rejection of null hypothesis respectively. The F-statistics of the bounds tests are compared against the upper and lower-bound critical values as extracted from Pesaran *et al*. (2001), Table CI (iii), Case 111: Unrestricted intercept and no trend.

4.3 Granger Causality Test

We concluded a cointegration relationship for our variables in Bound testing approach, thus we proceed to the Granger causality test to determine the direction of causality within the Vector Error Correction Model (VECM). The benefits of VECM are the reintroduction of the information lost by differencing time series. Thus, this step is the basic to determine the short-run dynamics and the long-run equilibrium relationship among the variables.

Table 4.3 presented the result of Granger causality test between Malaysian economic growth (GDP), government consumption (GOV), inflation (INF), population growth (POP), trade (TRAD) and private credit (CRED). First of all, we looked at the results for the long-run where the coefficient on the lagged error-correction term (ECT) provided a negative sign which is expected and significant at the significance level of 1% which confirms the results of the bounds test for cointegration. The ECT of -0.5869 implies that there is a high speed of adjustment to equilibrium after a shock. In other words, it means there is about 59% of disequilibria of shock that happened in previous year has been adjusted to the long-run equilibrium in the current year. Thus, in the long-run, all independent variables will granger cause the dependent variable which is the Malaysian economic growth (GDP).

From the result tabulated, the bidirectional and unidirectional relationship represented the granger causality in short run which run through the F-statistic (Wald test). There is bidirectional Granger causality between Malaysian economic growth and government consumption; between economic growth and inflation; and between economic growth and trade.

The reason behind is where the economic theory stated that government consumption to GDP is significantly affect the economic growth (GDP) in short and long run, and the economic growth granger causes the relative size of government to increase (Loizides & Vamvoukas, 2005). According to Mitchell, 2005, increase in government spending can actually boost the economic growth, where the public earn extra pocket's money from government. However, when government grows too large, the economy will shrink which shows a negative relationship of government consumption to economic growth. Plus, high economic growth of the country would result the government has more incomes which allows the government to spend more for other activities indirectly.

The Granger causality between inflation and growth shows that inflation will affect the growth in negative relationship (Bruno & Easterly, 1998) where the increase of inflation, will cause the price of goods and services in a nation to increase, public will not spend more which will decrease the consumption and at the same time the economic shrinks. Inversely, when the economic growth increases due to other factors, the demand for the nation's product will increase which will indirectly cause the inflation happened and vice versa (Pettinger, 2011).

Besides that, in the short run, trade and economic growth granger causes each other's where trade actually highly significant impact the economic growth (Busse & Koniger, 2012). In other way, the economic rises allows the nation to produce more goods and services which will improve the trade activities.

In addition to that, the result showed that there is bidirectional causality between government consumption and trade; between government consumption and inflation; and between inflation and trade. The two ways causal relationships between Malaysian economic growth and government consumption, economic growth and

inflation, economic growth and trade, have created and indirect linkage connecting these four variables.

For example, when government increases spending such as providing the subsidies for production of goods in domestic, it allows the country to produce more and supply the products to foreign country which allow the trade to happen. However, the increases of activities for trade may also increase the current account of the country's Balance of Payment which allows the government to have more incomes to spend more (Alesina & Wacziarg, 1998). In short, government consumption and trade has two ways relationship as the results showed.

According to Campillo & Miron (1997), the government policy may give impact to the nation's inflation rate. For instances, when government chooses to impose more tax on production of goods, the cost of production increases which cause the inflation rate increase among the nation. Whereas, when there is higher inflation, the public tends to save more rather than spending, at the same time, the government would rather implement the monetary policy to help the nation through controlling the inflation by giving subsidies on production of goods in order to reduce the price level (Kandil, 2015).

The relationship between the inflation and trade expressed by Stockman (1981), where the inflation has real effect to the trade activities through its role as tax on monetary transaction. Plus, Kurihara (2013) conveyed that there is statistically significant correlation between trade openness and inflation.

Lastly, there is unidirectional granger causality between economic growth and population growth; and between economic growth and private credit. In short run, the population growth granger causes the economic growth. Simon (1986) had done the

research about the neo-classical growth theory of the influences of population changes on economic growth and stated faster population growth can present a higher growth. Thuku *et al*., (2013) had also done the research on the impact of population growth towards the economic growth in Kenya. The research proved that population growth will promote economic growth. Therefore, in short run, population growth will give effect on economic growth of Malaysia.

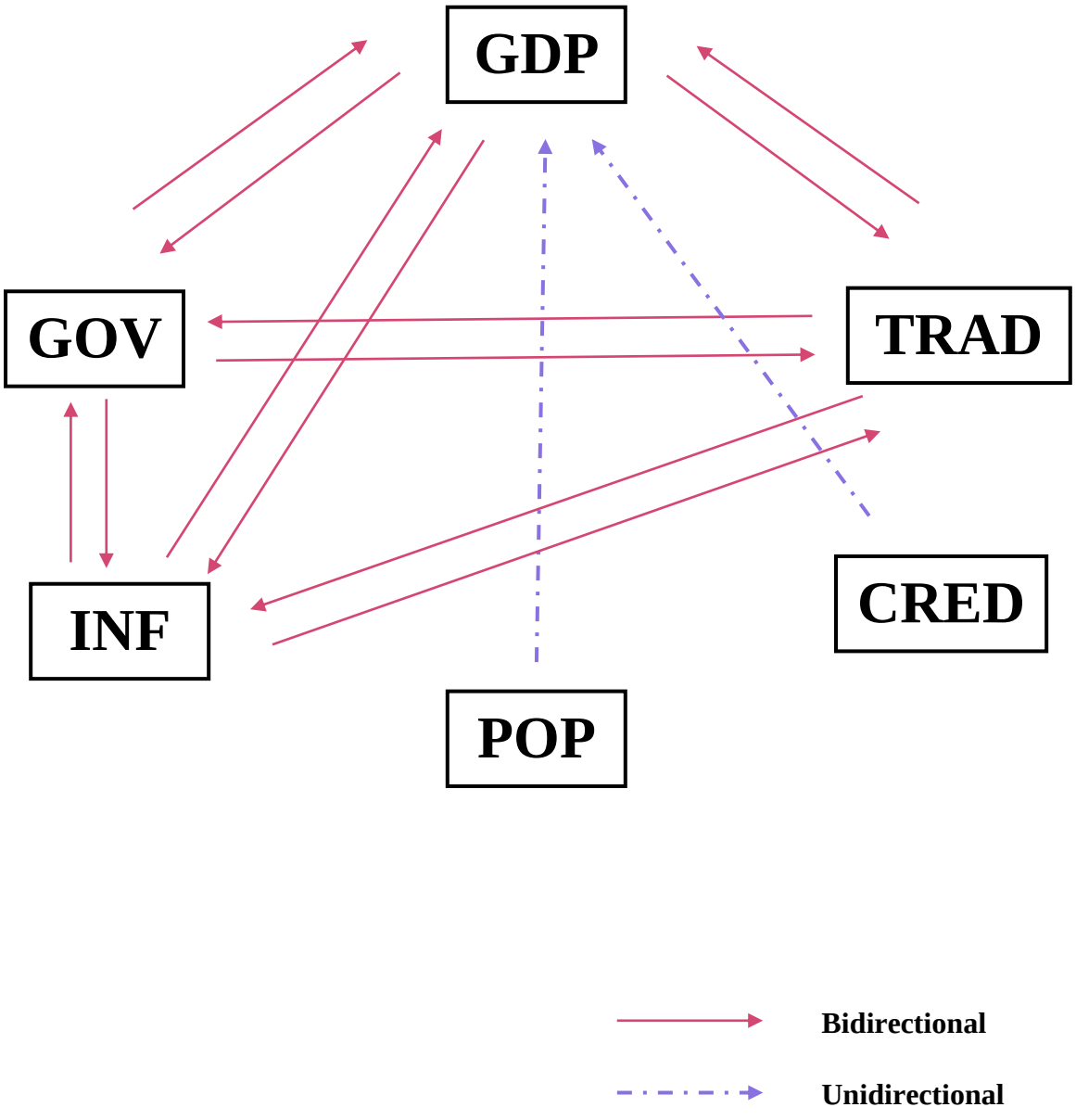
The unidirectional relationship between the economic growth and private credit indicated that the private credit may influence the economic growth in the short run. The private credit is the bank credit to the private sector that can be known as the financing method that represents the financial development of Malaysia. The higher the private credit to GDP, the higher the economic growth and the better it represents the financial development (Bekaert *et al*., 2005).

Table 4.3: Granger Causality Test Results

Dependent Variable	ΔGDP	ΔGOV	ΔINF	ΔPOP	ΔTRAD	ΔCRED	ECT
ΔGDP	-	16.5629***	4.3937**	3.1109*	22.8462***	8.7988***	-0.5869***
		(0.0003)	(0.0446)	(0.0592)	(0.0000)	(0.0059)	(0.0002)
ΔGOV	22.6714***	-	22.3582***	0.0522	90.4785***	0.3590	-0.0668
	(0.0000)		(0.0000)	(0.8206)	(0.0000)	(0.5528)	(0.5669)
ΔINF	5.0157**	3.2178*	-	0.0237	20.2532***	2.4765	-0.1750
	(0.0122)	(0.0815)		(0.8784)	(0.0001)	(0.1246)	(0.2555)
ΔPOP	0.1507	0.0824	0.5290	-	0.1552	1.3484	-0.00295
	(0.9279)	(0.9212)	(0.7160)		(0.9250)	(0.2907)	(0.8424)
ΔTRAD	8.9416***	87.5734***	45.0728***	0.1880	-	0.2029	-3.5331
	(0.0050)	(0.0000)	(0.0000)	(0.6672)		(0.6551)	(0.4972)
ΔCRED	0.6881	0.2397	1.2010	0.5425	1.5324	-	-0.0033
	(0.5105)	(0.6281)	(0.3154)	(0.5871)	(0.2330)		(0.9008)

Note: The figures denote the F-statistic value for the dependent variables with first difference operator and coefficient for the ECT, while the figures in parentheses indicate the probability value. This VECM Granger causality examines the null hypothesis of no cointegration between variables. *, ** and *** indicates the rejection of null hypothesis when F-statistic is greater than critical value developed by Fisher and Yates (1963) at significance level of 10%, 5% or 1%.

Figure 4.1: Granger Causality Relationship



4.4 Generalized Method of Moments (GMM)

In economics, time series data allows the researcher to collect the crucial and meaningful information. To study the relationship of liberalization to economic growth and financial system development, GMM approached is generated with the regression as below:

$$\mathbf{GDP_t = \beta_0 + \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 Gov_t + \beta_4 Inf_t + \beta_5 Pop_t + \beta_6 Trad_t + \beta_7 Cred_t + \mu_t}$$

Table 4.4 shows the results derived from GMM first-differences. To examine the validity of the instruments list used for GMM first-difference estimation (Table 4.4.1), we conducted the Sargan test which also known as the test for second-order serial correlation. The formula of Sargan test statistic is: Scalar pval = @chisq (J-statistic, (Instrument rank – number of regressors)). Therefore, for our GMM model, the scalar pval = @chisq (7.252778, (27-8)), and we conducted the equation in Eview system to generate the result which showed 0.9927388 that can reject the null hypothesis. This figure indicated that about 99.27% of our instrument list is valid. Thus, we can conclude that the instrument list is valid and appropriate for our GMM model with credible results.

Bear in mind, besides the two qualitative regressors of dummies, we have five others quantitative variables (GOV, INF, POP, TRAD, AND CRED). The equation with parameter values is written as follow:

$$\mathbf{GDP = 5.398784 - 1.060824\ D_1 + 0.210659\ D_2 - 0.707342\ GOV - 0.939428\ INF - 1.154045\ POP + 0.025488\ TRAD + 0.328653\ CRED}$$

From the estimated result obtained Table 4.4, the equation provided the adjusted R^2 of 0.465978. Thus, there is about 46.60 % of the variation in GDP per

capita is described by variation of independent variables by taking the degree of freedom into account. This indicated that our model is in moderate goodness of fit.

From the tabulated result, the dependent variable is gross domestic product per capita (GDP). In addition, if there is at least one capital account restriction is reported in Malaysia, the IMF capital account liberalization indicator takes a value of zero. Plus, the control variables, we reported the coefficient on the equity market liberalization that takes a value of one when the equity market is liberalized, and zero otherwise.

The constant is acted as the benchmark or control for our model since it is not dummy variable. Hence, the benchmark category is the other types of liberalization that implemented in Malaysia. Besides, the intercept value of 5.3988 in the regression represents the mean GDP of Malaysian economic growth. Therefore, it is about 5.40% as the mean of GDP when Malaysia implemented other types of liberalization. However, the GDP is lower by about 1.06% with implementation of capital account liberalization; and higher by 0.21% with the implementation of equity market liberalization.

Most important, the capital account liberalization is significantly negative to the GDP, while equity liberalization is significantly positive to GDP. The result is broadly consistent with our prior expectation with previous literature of Bekaert & Harvey (2002); and Bekaert *et al*. (2005). The dummy of capital account liberalization showed a negative coefficient of -1.060824. This suggested that, on average, the implementation of capital account liberalization will decrease the real per capita growth rate in GDP by 4.34% (5.40%-1.06%) in Malaysia. Most of the researchers such as Rodrik (1998), Kraay (1998), and Edisonn *et al*. (2002a) had made some considerable debate about the impact of capital account openness on growth. They also claimed that there is no correlation exists between them. However,

there are some researchers found a positive relationship of capital account liberalization towards growth such as Quinn (1997), and Quinn and Toyoda (2003).

The equity market liberalization dummy showed a positive coefficient of 0.210659 which suggested that, on average, the equity market liberalization is associated with a 5.61% (5.40% + 0.21%) increase in GDP per capita growth rate. These results indicated that if the foreign investors invest in Malaysia equity securities, Malaysian economic will increase as well which is consistent with other researchers' hypothesis (Bekaert & Harvey, 2002) and (Bekaert *et al*., 2005).

As our result suggested that as government consumption goes up by 1%, on average, the economic growth of Malaysia will decrease 0.71% which is consistent with the hypothesis. Government consumption is statistically highly significant for our model with 0.0004 of p-value that lower than 1% significant level.

Inflation showed a negative relationship to Malaysian economic growth and significant at 1% significance level with p-value of 0.0086. As inflation rate goes up by 1%, on average, the Malaysian economic growth will decrease by 0.94%. Barro (1997a, b) has showed that a high rate of inflation can affect the economic growth to drop.

From our result, population growth had negative relationship to Malaysian economic growth which is consistent to our prior expectation as stated in previous study of Bekaert *et al.* (2005). The population growth is significant to our model which had p-value of 0.0003 that less than 1% significance level. As population growth increase by 1%, the economic growth will decrease by 1.15%, on average. As mentioned by Bekaert *et al.* (2005), larger the countries may have higher costs of structural reforms, thus as the Malaysian population grow larger, it will increase the

cost for government to structure the financial reforms. As such, the result is consistent to the hypothesis stated where the population growth has negative effect on economic growth.

The coefficient on trade openness is positive, and highly significant. While we expected a positive effect of trade openness on the likelihood of a stock market liberalization. Moreover, as 1% increase in trade will increase the economic growth with the implementation of liberalization by approximately 0.025%. Trade openness is actually a macroeconomic reforms in Malaysia country which including in the liberalization. The measure of trade openness is the ratio of total imports and exports of goods and services to gross domestic product. Trade actually stands in a firm position where it can affect the growth of a country which is the subject of other large literature (Sachs and Warner, 1995; and Wacziarg, 2001). They mentioned a higher growth is due to the reason of lower barriers to trade. However, we are concerning about the impact of financial market liberalization on growth but not testing the impact of trade policy. Therefore, Malaysia with higher trade may result in higher growth as well.

According to McKinnonn (1973) with the significant studied in the relationship between financial development and growth, we examine the financial development with the role of banking sector by including the private credit to GDP variable. The financial reforms in Malaysia with the changes in the rules and regulation furthering the financial development which can occur simultaneously with the equity market liberalization. Furthermore, to capture the financial system development of Malaysia, we proxy the private credit, which equals the bank credits to the private sector divided by gross domestic product (GDP) as the development of the banking sector. Private credit showed significantly in our model with the p-value of 0.0237. From the result, with 1% increase in private credit, on average, the GDP will increase approximately 0.33% after liberalization. As mentioned by Bekaert *et al.* (2005), if a country has well development in financial markets, the countries are more

likely to support the market economy with the necessary of the institutions, at the same time, become more able to attract foreign investors with the stock markets liberalization. In short, we can conclude that if Malaysia has strong banking system, it can actually provide the foundation whereby Malaysia can achieve a larger increment to economic growth following a capital account and equity market liberalization.

Table 4.4: Generalized Method of Moments Test

Variables	Dependent Variable (GDP)			
	Variable Coefficient	Standard Error of Coefficients	T-Statistic	P-value
Constant	5.398784	0.877109	6.155204***	0.0000
D1	-1.060824	0.132304	-8.018080***	0.0000
D2	0.210659	0.084509	2.492754**	0.0194
GOV	-0.707342	0.175684	-4.026226***	0.0004
INF	-0.939428	0.330481	-2.842608***	0.0086
POP	-1.154045	0.275123	-4.194649***	0.0003
TRAD	0.025488	0.006237	4.086715***	0.0004
CRED	0.328653	0.136794	2.402539**	0.0237
Adjusted R-squared			0.465978	
S.E. of regression			0.482454	

Note: *, **, and *** indicate the rejection of the null hypothesis at significant levels of 10%, 5% or 1%.

4.5 Chapter Summary

In short, we can conclude that our model is robust and valid as all variables have achieved the stationary in first difference form through the unit root tests. Besides that, we conducted the bound test and granger causality test to determine the long run and short run relationship between the variables. Moreover, we also conducted the GMM test for our model to determine the relationship of regressors towards dependent variable. By referring to the Granger causality test and GMM, the overall results are considered to be consistent to prior hypothesis. The capital account and equity market liberalization had matched our prior expectation to have a negative and positive relationship with Malaysian economic growth. In general, both liberalizations implemented in Malaysia will significantly affect the economic performance in both short and long run.

CHAPTER 5: CONCLUSION

5.0 Summary of Statistical Analysis

Our research is mainly focus on the role of capital account and equity market liberalization with the financial system development as the linkage towards the economic performance in Malaysia. The independent variables used are government consumption (GOV), inflation (INF), population growth (POP), trade (TRAD) and private credit (CRED). The short run and long run relationship between Malaysia economic developments will be determined based on the years 1970 until 2014 which consists of full data size in sum of 45 years. In order to conduct the analysis accurately, E-view 9 software is used to generate the interpretable result.

5.0.1 Unit Root Test

Before any of the analysis is performed, it is essential for us to test whether each of our data is stationary in nature or not. In order to do this, two separate unit root tests which are Augmented Dickey Fuller (ADF) test and Ng-Perron Modified (NP) test are deployed to test the stationarity of our data before cointegration tests (Bound Test) are carried out. All the variables showed non-stationary in level form (trend and intercept), but somehow the consistent results are shown when the variables are being tested on first difference form, whereby all of the variables had achieved stationary.

5.0.2 Bound Test

The bound testing analysis of the long-run relationship between the dependent variable and independent variables are being modeled which included gross domestic product per capita (GDP) as the dependent variable, while, government consumption (GOV), inflation (INF), population growth (POP), trade (TRAD) and private credit (CRED) are the independent variables. With the result shown in bound test, we can conclude that the bounds co-integration test showed the existence of a steady-state long-run relationship of dependent variable, GDP with all the independent variables.

5.0.3 Granger Causality Test

The Granger causality test is used to determine the relation causality with the Vector Error Correction Model (VECM). Granger causality showed the result of short-run equilibrium relationship and the long-run equilibrium relationship among the variables.

In short, this granger causality test showed there was causality between Malaysian economic growth and government consumption; between economic growth and inflation; and between economic growth and trade. This means there was bidirectional causality between them. Furthermore, there was also the bidirectional relationship between government consumption and trade; between government consumption and inflation; and between inflation and trade. Lastly, there was a unidirectional Granger causality between economic growth and population growth; and between economic growth and private credit. The population growth and private credit granger causes the economic growth in the short run.

5.0.4 Generalized Method of Moments (GMM)

For the Generalized Method of Moments (GMM) estimation, the results showed the models have relationship between the dummy of liberalization that involves capital account liberalization and equity market liberalization towards economic growth. GMM estimation also generated the effect of financial system development as the linkage between the implementation of liberalization and economic growth in Malaysia.

Table 5.1: Summary of Generalized Method of Moments (GMM)

Dependent Variable	Variables	Relationship
GDP per capita	Independent Variables	Moderate goodness of fit
GDP per capita	Capital account liberalization	Negative
GDP per capita	Equity account liberalization	Positive

Our regression showed moderate goodness of fit based on adjusted R^2 estimation. Furthermore, the capital account liberalization had negative relationship to the GDP per capita, while equity market liberalization had positive relationship to GDP per capita. The result was consistent with our prior expectation with the findings of Bekaert & Harvey (2002), Bekaert *et al.* (2005) and etc.

5.1 Discussion

In this paper, we analyze how capital account liberalization and equity market liberalization could affect the financial system development and economic growth in Malaysia. As referred to the results presented in Chapter 4, Malaysia's capital account liberalization has significant negative relationship towards the GDP. Therefore, we would conclude that negative impact of capital account liberalization impact on the economics of Malaysia was due to the risks that associated in capital inflows. For example, the risks included the loss of macroeconomic stability, damage to financial stability and risk of sudden capital flow reversal.

Acknowledged that the emerging Asia had experienced a large capital inflow which causes a crisis to happen. Moreover, according to Reisen and Soto (2001), the studies which focus on the absence or presence of capital controls cannot allow for varying degrees of intensity in the operation of capital account restrictions. Plus, it is crucial to encourage foreign savings to spur growth and study which forms of private flows would maximize the benefits of financial integration. Besides, the country will be worse off if the foreign savings are attracted into protected sectors, as long as foreign capital receives the full value of its marginal product.

In addition, the risk of suddenly withdrawn of capital can cause a slump which may reduce the national savings (Carroll and Weil, 1993). For example, Bank Negara Malaysia (BNM) had expected a large shifts in capital flows will continue in year 2015 where Malaysia may face the volatile capital flows which causes the uncertainty of global economic outlook. Thus, we found out that the volatility of capital flows in Malaysia may cause the implementation of capital account liberalization brings negative impact on economic growth. What is more, Calvo (1998), showed that the mechanics of sudden stops in capital flows had emphasized that negative swings in

foreign savings may result in widespread bankruptcies, and destroyed local credit channels. In short, strong macroeconomic fundamentals of capital account liberalization can shift more capital into Malaysia, however, capital flows are sensitive to any change in risk appetite. Hence, the negative impacts of liberalization of capital account may be due to the risks of sudden capital reversal which slowdown the private capital inflows.

Meanwhile, our results showed that Malaysia's equity market liberalization has a significant positive relationship towards the economic growth. The result was consistent with several researchers such as Bekaert *et al.* (2005), Gamra (2009) and Li (2012) who found a positive relationship between equity market and economic growth. We found that equity market liberalization leads to an approximate 5.61% increase in the real per capita GDP growth. Therefore, equity market liberalization is expected to intertwine with both financial development and macroeconomic reforms (Bekaert *et al.*, 2005).

According to Naceur *et al.* (2008), the coefficient associated to government consumption is expected to be negative. Our finding is consistent with the hypothesis since Malaysia's government consumption raised by 1%, on average, the economic growth of Malaysia will declined by 0.71%.

Bekaert, Harvey and Lundblad (2005) concluded that inflation has a strong negative relationship with economic growth. Therefore, our result is consistent and it is proved that when Malaysia's inflation rate increased by 1%, on average, the economic growth will decrease by 0.94% due to a negative relationship. A higher inflation might deduct the investment spending and labor supply and hence lead to negative influenced on growth (Naceur *et al.*, 2008).

The result on population growth which suggests a negative relationship to Malaysian economic growth is consistent with the previous study of Bekaert *et al.* (2005). As emphasized by Bekaert *et al.* (2005), higher costs of structural reforms are imposed to larger countries. Since the population of Malaysia is growing larger, therefore the cost needed for government to structure the financial reforms will be higher.

Trade openness is concluded indeed enhances economic development and they have a positive relationship (Naceur *et al.,* 2008). The coefficient on trade openness in our result is positive and highly significant. Thus, it is consistent with the hypotheses. From the result, we indicated that the lower barrier to trade lead to higher trade and thus causes a higher growth.

According to Naceur *et al.* (2008), the effect of the credit to private sector on private investment is used to capture the financial system development of Malaysia. A positive relationship is suggested. Our result shows that private credit is significant and consistent with the hypothesis. We concluded that Malaysia as a country which has well development in financial markets and provide the institutions necessary to support a market economy. In turn, more foreign investors are attracted with the stock markets liberalization.

5.2 Implication of Study

In our research, we have verified the impacts on Malaysia's economic growth when Malaysia's government decided to liberalize their financial sector and we found that the liberalization for capital account occurred in opposite direction for the

economic growth in our outcomes. In order word, the implementation of capital account liberalization has a negative relationship toward Malaysia's economic growth. Acknowledged that we discovered the execution of liberalization for capital account may lead to financial crisis to take place which will cause economic downturn. Thus, our results in GMM for capital account liberalization which concluded an opposite direction with economic growth is reasonable.

First of all, fiscal policy in Malaysia will make a budget surplus, lowered down the inflation and the appreciation of the real exchange rate. Thus, this tool is very useful in commanding the capital inflows. The interest rates can be lowered down with the trimming in the government consumption which has the similar effect as the reduction of the demand for loanable funds. Besides, Malaysia government has the responsibility to develop the country which should be balanced with this fiscal policy. However, fiscal policy would not manage the short-term speculative capital inflows efficiently due to the existence of long lags. In short, the Malaysia monetary authority would need to pursue active monitoring of capital flows. To tackle the effect of volatility in capital flows, a sound policy, financial sector resilience, large reserves, and a strong domestic sector are needed.

However, according to the previous chapter of our study, many literatures stated that there was a positive impact of capital liberalization on the economic growth while some argued that economic growth has negative effect from that liberalization. Their results showed a negative impact in short run and positive impact in long run on the economic growth. With their explanations, the implementation of capital account liberalization definitely affects economic to burst, yet the financial crisis happened offset the growth or even worse. It may make no change on economy or cause economic oppression for a period of time so the government needs time to restructure and rearrange their policy objectives and obligations. In long term, capital account liberalization enhances the economic performance by superior operating financial markets. This is because there is more than enough time to recover the mess

that financial crisis left off. Yes, above these are all about other researchers' fine works. For our own explanation, in overall, the capital account liberalization causes Malaysia's financial fragile just because of the financial crisis has brought out by the liberalization. We summarized that Malaysia unable to pull back its economy in short term and need even more time to recover in long term.

As Malaysia is a developing country, therefore Malaysia has not strong enough in the corporate governance and financial system than those developed countries such as United Stated or United Kingdom, which able to rebound from financial crisis plus the well-performed financial liberalization that make their economy growth speedy. We suggest policymakers some implications of our study that Malaysia should operate a more stable financial system and stronger regulatory framework that can able to fast-adapt the problems arise from unexpected events and supervise the activities of financial institution to maintain the stability of Malaysia's economy. Therefore, with the implementation of the both masterplans of FSMP and Blueprint in the development of financial sector would actually provide a strong financial system to Malaysia. The masterplan allowed Malaysia to promote the private investment growth which may increase the GDP where the government can actually reduce the corporate tax rate to enhance the level of competitiveness in Malaysia. By doing so, a higher reinvestments from Malaysia economic agents would actually happen which will increase the corporate earnings for Malaysia. Plus, the direct investment would be increased with a lower corporate tax.

On the other hand, Lee and Zeng (2016) mentioned that the likelihood of financial crisis can be reduced indirectly by insurance development. Consequently, policymakers can focus more on the enhancement of insurance activities as we know recently insurance industry has been working quite successful in Malaysia.

For the equity market liberalization, our study showed a direct impact on Malaysia's economic growth. So, we can draw a short conclusion that our research's outcome is significantly matched with the study of those literatures. The deregulation of equity market does strengthen crucially investment sector market by benefiting foreign and domestic investors where both parties are able to trade freely in foreign and domestic equity without financial constraints. Thus, foreign capital will increase the availability in the market as help to minimize the cost of capital that will lead to push the economy. Other than that, equity market being liberalized improves the liquidity of the market. A liquid market means that the shares of stock easily to sell into cash with only little change in prices. Due to the prices only subjected to small changes, the market participants able to trade in stable prices and this is good for reducing the speculation activities in which trying to earn unrealized gains as profit. We truly believe that Malaysia's economy will grow as more liquid in market and high frequency of trading by the implementation of equity market liberalization. We have come out some recommendation for policy implications that government should keep on trend on the exchange rate as well as the market itself to maintain the stability of economy and control the speculation activities. We suggested that Malaysia's government may establish more advanced business environment for greater investments to both foreign and local investors which encourage healthy competition by providing better service to public.

Moreover, according to Financial Sector Blueprint 2011-2020, the financial system of Malaysia has improved its character and position in international due to the gradual liberalization of the financial sector. Since the local financial institution has been strengthened, the incumbent foreign institutions are accorded with greater operational flexibilities. In turn, it results a higher potential for them to have a balanced growth and promote economy. Interestingly, the new institution entry facilitates the participation of foreign within the financial system in order to serve the new growth region in Malaysia. Furthermore, it facilitates more new institutions to entry in Malaysia market and impose higher limits for domestic institutions to invest

in foreign equity. The local financial institution is considered to have further development within a market which is more competitive as a result of the financial sector liberalization approach. At the same time, it preserved the financial system stability in overall and as the fundamental to improve the function of financial system in Malaysia which involved promoting of economic activity regionally and internationally.

In general, by realizing all the benefits from financial liberalization, first thing is to understand all the causes and effects of the financial policies to ensure it can be carried out successfully and of course, there is no exception for the importance of soundness of economic environment and advisable institutional. Other external or internal factors can be any reason of failure in the implementation of the policies such as infrastructure, political system and social evils. We found a proof of a developing country which is Pakistan failure in implementing its policies because the country did not have fully well-preparation (Munir, Chaudhry, & Akhtar, 2013).

5.3 Limitations

There are several limitations we found in our research. Since we study the effect of liberalization in Malaysia, the result is only applicable for developing country but not necessary same for the developed country. However, we concentrated our study in Malaysia country only, which mean we cannot apply the result to other countries. Our result could not represent financial liberalization relationship towards economic growth as a whole for other countries as well.

In addition to that, we used annually data to examine the relationship of liberalization towards the economic growth, which has lower frequency compared to quarterly or monthly data. Quarterly and monthly data allowed the result obtained to be more robust and accurate compare to annually data. Moreover, we only examine two types of liberalization in Malaysia, where we do not include other types of liberalization that implemented in Malaysia such as the trade liberalization. We only compared the capital account and equity market liberalization in Malaysia.

Therefore, the future researcher may involve more types of liberalization to study its effect to the economic growth and also involves more countries such as developing and developed countries in order to have a validity comparison on the liberalization impact.

5.4 Recommendation for Future Study

First of all, we recommend future researcher to investigate the liberalization on a group of countries such as Asian country or non-Asian country to have a better comparison among these countries. A study on a group of countries can analyze more precisely and deeply on the effect of liberalization.

Moreover, the data of our variables employed in our model is in general form where it represented the whole Malaysia country, from both public and private sectors. Thus, the results of our study only available for general liberalization effect on Malaysian performances but not the individual effect on firm level in Malaysia. The positive impact of equity liberalization and negative impact of capital account liberalization only applicable to whole nation but does not investigate the impact on

firm level. Thus, we recommend the future researchers to involve the research of liberalization into different sizes of companies in Malaysia. For instances, the researchers can narrow down the scope of study into the sizes and performance of each individual company as where the study can investigate the impact of liberalization on different firm level Malaysia. The reason to involve this in the research is to allow the government and policy maker to have a clear direction in outlining proper policies to implement for liberalization in the country through the identified firm level that absorb more impacts from liberalization and hence promote and enhance the Malaysian economic growth. Besides that, it is necessary to identify which sector of industries absorbs more capital and credit from other sources in order to generate a better and efficient liberalization policy to reduce the cost of borrowing and so on.

What is more, the future researcher can capture the banking crisis or financial crisis to the effect of liberalization on economic growth. This is because the positive impact of liberalization may be eliminated by crisis when it involves in a short term investment or a short period. Hence, the pre-liberalization and post-liberalization effects can be included in the research to have a better concept on liberalization. The policy makers and government are allowed to build a proper policy or plan for Malaysia through the incident of crisis. Furthermore, the effect of corruption on liberalization is another factors that need to study to have a better concept whether the corruption would affect the confidence of investors on Malaysian investment.

Last but not least, we suggest the future study to use the advance techniques such as unit root test, multivariate cointegration analysis and vector error correction model with structural breaks. This method gives advantage where it is easier to compute the single and multiple regressors (Davidson & Monticini, 2010).

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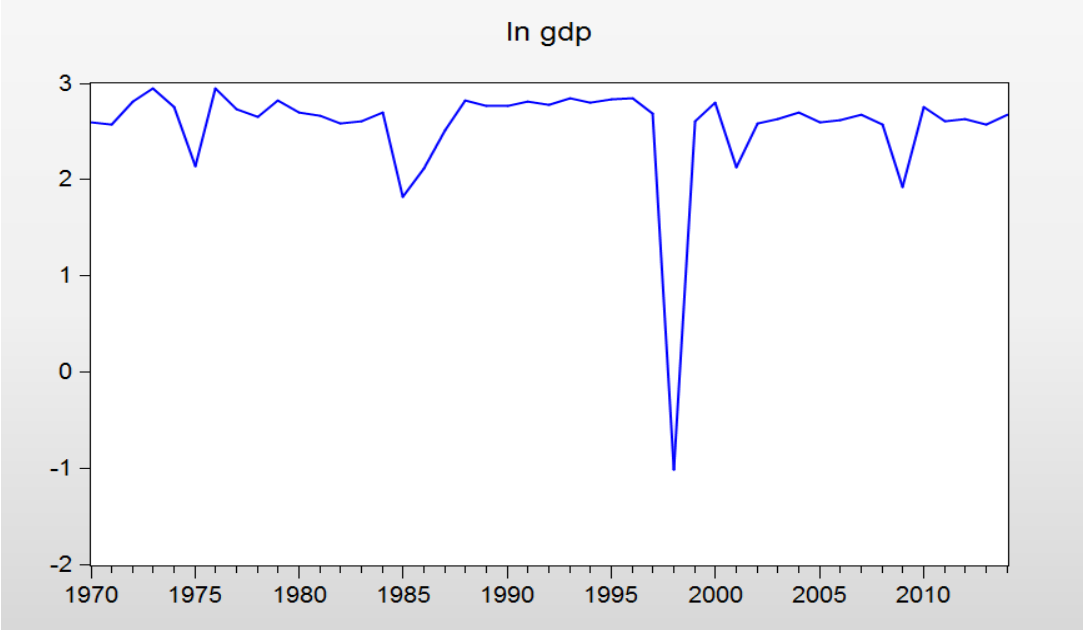
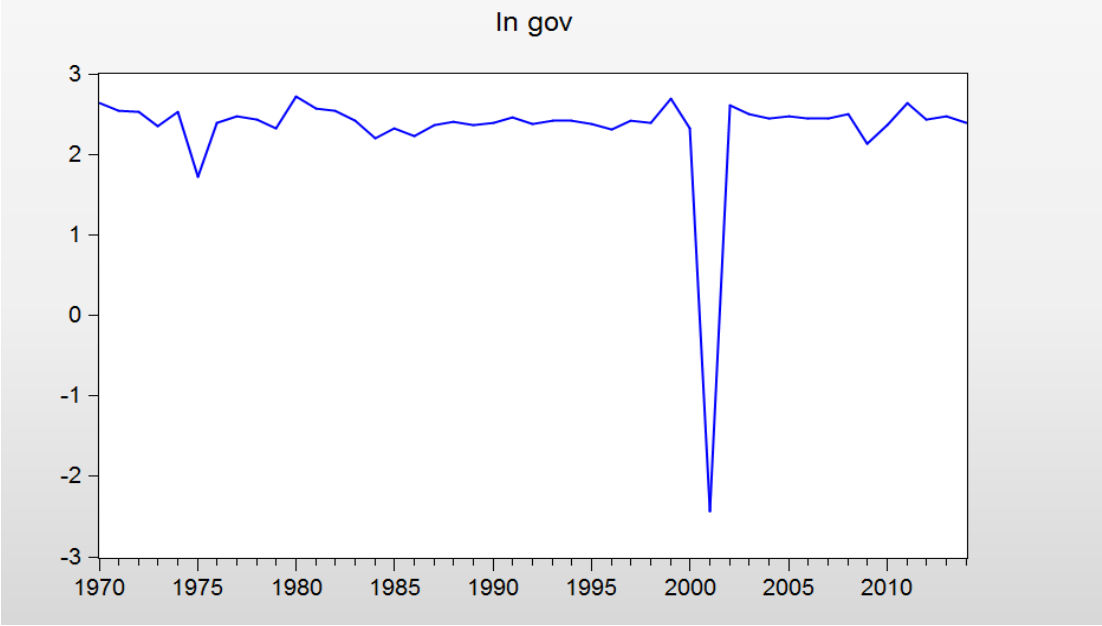
APPENDICES

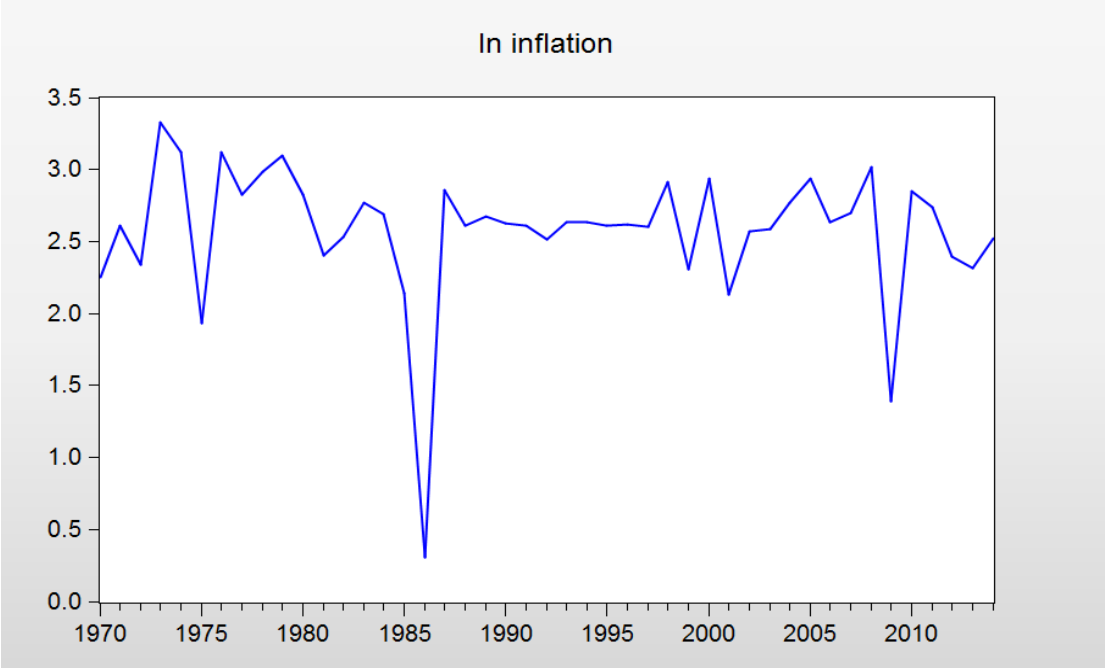
Appendix 1: Graph of Ln GDP



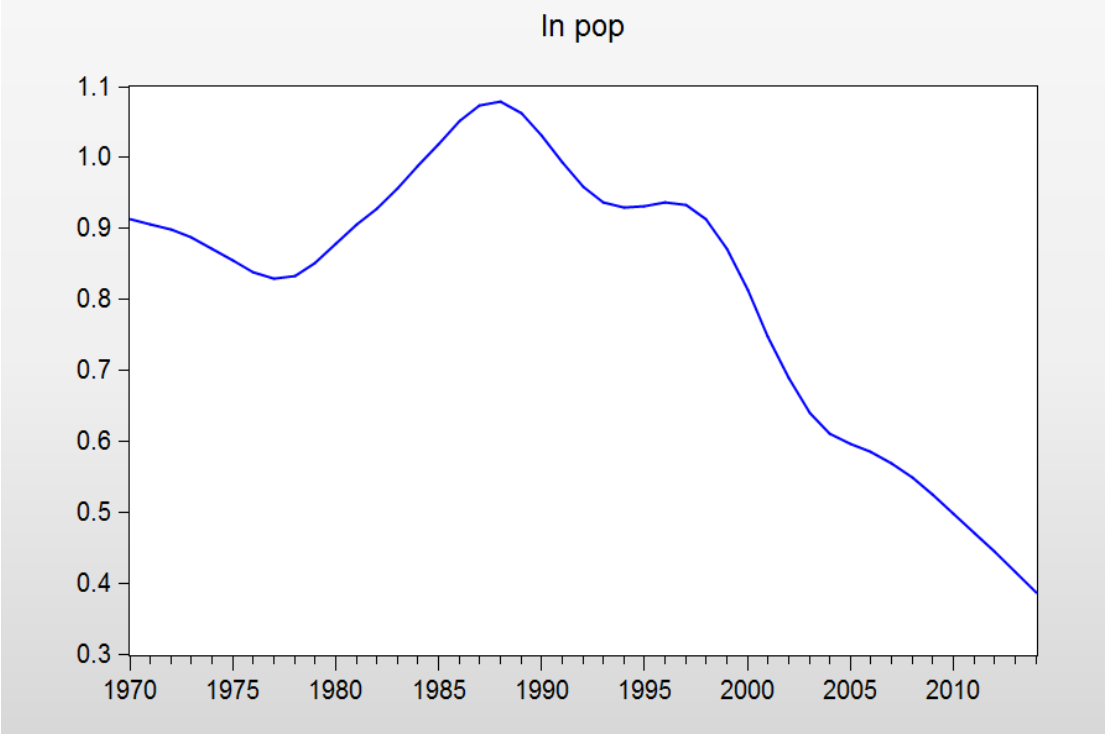
Appendix 2: Graph of Ln GOV



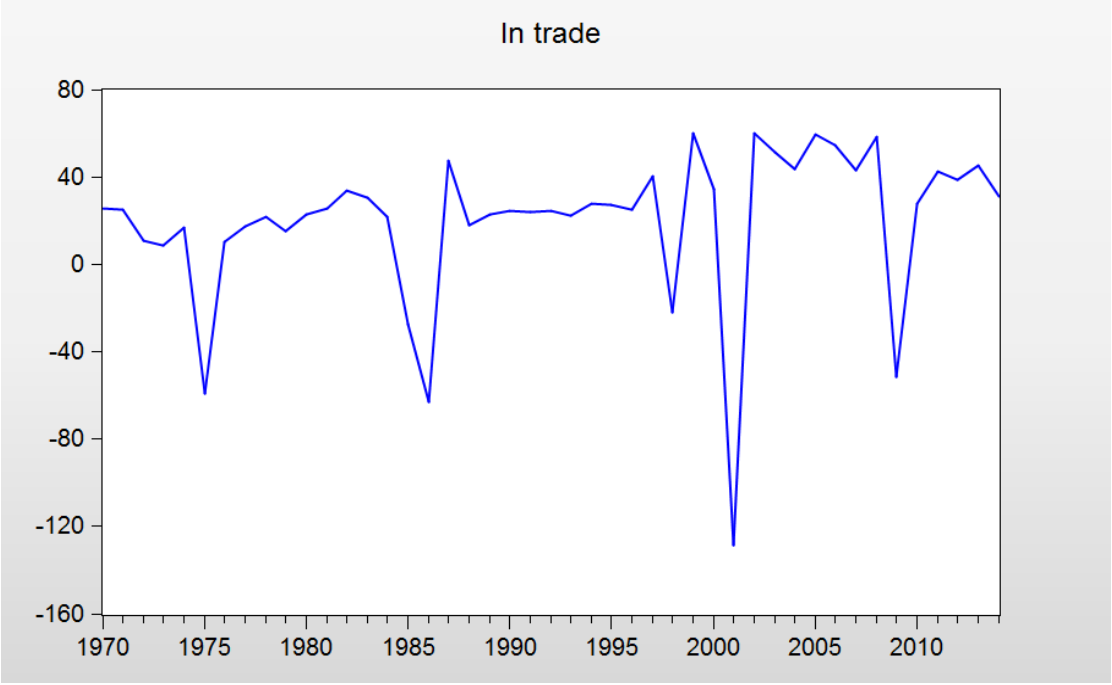
Appendix 3: Graph of Ln INF



Appendix 4: Graph of Ln POP



Appendix 5: Graph of Ln TRAD



Appendix 6: Graph of Ln CRED