THE DETERMINANTS OF MALAYSIAN STOCK MARKET DEVELOPMENT

NORSYUHADA BINTI ZAHARUDDIN

MASTER OF SCIENCE FINANCE
UNIVERSITI UTARA MALAYSIA
2017

THE DETERMINANTS OF MALAYSIAN STOCK MARKET DEVELOPMENT

By
NORSYUHADA BINTI ZAHARUDDIN

Research Paper Submitted to
School of Economic, Finance and Banking,
Universiti Utara Malaysia,
in Partial Fulfillment of the Requirement for the
Master of Science (MSc) Finance

Pusat Pengajian Ekonomi, Kewangan dan Perbankan
SCHOOL OF ECONOMICS, FINANCE, AND BANKING
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PENYELIDIKAN
(Certification of Research Paper)

Saya, mengaku bertandatangan, memperakukan bahawa
(I, the undersigned, certified that)
NORSYUHADA ZAHARUDDIN (820781)

Calon untuk Ijazah Sarjana
(Candidate for the degree of)
MASTER OF SCIENCE (FINANCE)

telah mengemukakan kertas penyelidikan yang bertajuk
(has presented his/her research paper of the following title)

THE DETERMINANTS OF MALAYSIAN STOCK MARKET DEVELOPMENT

Seperti yang tercatat di muka surat tajuk dan kulit kertas penyelidikan
(as it appears on the title page and front cover of the research paper)

Bahawa kertas penyelidikan tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan.
(that the research paper acceptable in the form and content and that a satisfactory knowledge of the field is covered by the dissertation).

Nama Penyelia (Name of Supervisor) : **Dr. Sharmilawati Sabki**

Tandatangan (Signature) :

Tarikh (Date) : **15 Januari 2018**

DECLARATION

I declare that thesis work described in this research paper is my own work (unless otherwise acknowledged in the text) and that there is no previous work which has been previously submitted for any academic Master's program. All sources quoted have been acknowledged by reference.

Signature : _____

Name : Norsyuhada Binti Zaharuddin

Date : December 2017

PERMISSION TO USE

In presenting this dissertation in partial fulfillment of the requirement for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this dissertation in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Dean of School of Economic, Finance and Banking where I did my dissertation. It is understood that any copying or publication or use of this dissertation parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation.

Request for permission to copy or to make other use of materials in this dissertation in whole or in part should be addressed to:

Dean of School of Economics, Finance and Banking
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman

ABSTRAK

Pasaran saham membolehkan pelabur menyumbang dana kepada syarikat untuk operasi dan pembangunan mereka. Oleh itu, perkembangan pasaran saham sangat penting bagi setiap negara kerana pasaran saham yang maju menyediakan kepelbagaian risiko yang berkesan, meningkatkan pendedahan maklumat syarikat-syarikat dan meningkatkan amalan tadbir urus korporat. Objektif kajian ini adalah untuk menentukan kesan pembangunan bank, pertumbuhan ekonomi, inflasi dan kadar penjimatan ke atas pembangunan pasaran saham di Malaysia dalam tempoh 13 tahun (2004 hingga 2016). Pemboleh ubah bergantung adalah perkembangan pasaran saham sementara pembolehubah bebas adalah pembangunan bank, pertumbuhan ekonomi, inflasi dan tingkat tabungan. Kajian ini mendapati bahawa pertumbuhan ekonomi dan kadar penjimatan telah meningkatkan perkembangan pasaran saham di Malaysia. Sebaliknya, inflasi telah dapat mengurangkan pembangunan pasaran saham dengan ketara. Walau bagaimanapun, perkembangan bank menunjukkan kesan yang tidak ketara ke arah pembangunan pasaran saham. Oleh itu, tindakan meningkatkan bahawa pertumbuhan ekonomi, inflasi dan kadar penjimatan mempunyai pengaruh besar terhadap perkembangan pasaran saham malaysia. Oleh itu, dasar dan peraturan yang disasarkan untuk meningkatkan pemboleh ubah tersebut boleh memberi impak besar dalam mempromosikan pembangunan pasaran saham

Kata Kunci: Pembangunan Pasaran saham, Pembangunan bank, Pertumbuhan ekonomi, Inflasi, Kadar penjimatan.

ABSTRACT

Stock market allows investors to contribute funds to the companies for their operation and development. Thus, the development of stock market is very important for every country because a well-developed stock market provides an effective risk diversification, enhances information disclosure of the companies and increases the corporate governance practice. The objectives of this study are to determine the effect of bank development, economic growth, inflation and saving rate on stock market development in Malaysia for the duration of 13 years (2004 to 2016). The dependent variable is the stock market development meanwhile the independent variables are bank development, economic growth, inflation and saving rate. This study finds that economic growth and saving rate have significantly enhanced the stock market development in Malaysia. On the other hand, inflation has found to significantly reduce the stock market development. However, bank development shows an insignificant impact towards stock market development. Therefore, the findings indicate that, economic growth, inflation and saving rate have a major influence on the Malaysian stock market development. Thus, the policies and regulations targeted at improving those variables could have a significant impact in promoting the stock market development.

Keywords: Stock market development, Bank development, Economic growth, Inflation, Saving rate.

ACKNOWLEDGEMENT

In the Name of Allah, the Most Forgiving and the Most Merciful

All praise belongs to Allah whom we worship

I would like to extent my deepest gratitude and thanks to Allah the Almighty for giving me excellent health, energy, and capability to complete my thesis.

My deepest appreciation goes to my academic supervisor, Dr. Sharmilawati binti Sabki and thank you for her valuable time, guidance, opinions, suggestions, and encouragement throughout the preparation of this study.

Special thanks to my beloved husband, Amar Zhariff Bin Abd. Rashid who never stops praying for my success. My love to my family members as well for their support, understanding, and patience throughout my study.

I also wish to thank my friends especially Norlida, Hidayah, Nina, Hamizah, Khairunnisa and other lecturers in Universiti Utara Malaysia. Without their endless assistance, attention, care, encouragement, and sacrifice, it would have been hard for me to complete this study.

Finally, I wish to thank all individuals and institutions that have directly or indirectly contributed toward the completion of my Master dissertation.

May Allah ease everything you guys do.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURE

LIST OF ABBREVIATIONS

Abbreviation		Meaning
BNM	=	Bank Negara Malaysia
GDP	=	Gross Domestic product
KLSEB	=	Kuala Lumpur Stock Exchange Berhad
KLSE	=	Kuala Lumpur Stock Exchange
CCM	=	Companies Commission of Malaysia
CMP1	=	Capital Market Masterplan 1
CMP2	=	Capital Market Masterplan 2

CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

Stock market is the market in which shares of publicly held companies are issued and traded either through exchanges or over-the-counter markets and it also known as equity market. Stock market allows investors to contribute funds to the companies for their operation and development. This market is very important to mobilize long term capital for the overall development of the economy.

The contribution of the stock market development to every country is made through various channels. Levine and Zerdos (1996) argue that a well-developed stock market reduces risk through diversifications, enhances information acquisition about companies, increases corporate governance practices and improve the efficiency of saving mobilizations. Obstfeld (1994) argues that the effectiveness of risk diversification in stock market promotes the investments in higher return projects, therefore resulted in overall output growth. A well-developed stock market is also essential in mitigating agency-principal problems by enhancing the corporate control (Jensen and Murphy, 1990). In Malaysia, the stock market has becoming an important vehicle in providing financing to the companies and investment opportunities to the small investors (Abdul Rahman, 2006). Furthermore, stock market is also crucial for the Malaysian development.

Garcia and Liu (1999) defined the development of stock market as a multi-dimensional concept. In addition, they indicate that the stock market can be measured based on a few indicators such as liquidity, stock market size, concentration, integration and also

volatility. Yartey (2008) employs the stock market capitalization over gross domestic product (GDP) as a measurement of stock market development because it measures the overall size of the stock market in an economy. In addition, few studies agree that an overall size of the stock market is positively related to its ability to mobilize fund and diversify risk efficiently (N' Zue, 2006; Yartey, 2008).

1.1 OVERVIEW OF STOCK MARKET DEVELOPMENT IN MALAYSIA

The Malaysian Stock Exchange was formed in 1960 and the first public trading of stocks was begun in 9 May 1960. In 1964, the Stock Exchange of Malaysia was officially formed but this stock exchange continued to function under the name Stock Exchange of Malaysia and Singapore (SEMS). Following the separation between the Kuala Lumpur Stock Exchange Berhad (KLSEB) and the Stock Exchange of Singapore (SES) in 1974, the Kuala Lumpur Stock Exchange (KLSE) has been incorporated on 14 December 1976.

Since then, Malaysian government has done various efforts to develop Malaysian stock market. The Securities Commission was appointed as a main regulator for Malaysian stock market under Securities Industry Act (1983). Apart from that, various regulatory bodies were given the authority to participate in the Malaysian stock market development. For example, Company Commission of Malaysia (CCM) was given power to supervise securities industry under Companies Act (2016) (previously known as Companies Act 1965) and Foreign Investment Committee (FIC) administered the stock market under the Malaysian Code on Take-overs and Mergers 1998. In addition to policies and regulations set by the authorities, Bursa Malaysia Berhad has established various rules and requirements to ensure an orderly and developed stock market in Malaysia. For example Listing Requirements,

Business Rules and Practice Notes were established to maintain the integrity and efficiency of the stock market.

The first modernization efforts were done in 1995, where the computerized trading system was introduced. In addition, The Capital Market Masterplan 1 (CMP1) was introduced on 22 February 2001 to chart the direction of Malaysian stock market for 10 years starting 2001. As of 16 July 2007, more than 75 per cent of the 152 recommendations in the 10-year CMP have been implemented, including the establishment of single Malaysian exchange in 2002, demutualization of stock market in 2005 and the introduction of web-based Fully Automated System for Issuing/Tendering (FAST) in 2007. In December 2008, Bursa Trade Securities was launched to enable faster processing and execution of orders and to provide wider trading functions.

One of the prominent Malaysian stock market development efforts was the demutualization of KLSE on 5 January 2005; the KLSE was converted into a public company limited by shares. Upon the conversion, the organization has transferred the securities exchange business to a new wholly-owned subsidiary, Bursa Malaysia Securities Berhad. The KLSE has become known as Bursa Malaysia Berhad on 14 April 2005. The demutualization was initiated to further enhance the corporate governance structure of Malaysian stock market in proving better services to the market participants.

In addition, the Capital Market Masterplan 2 (CMP2) was introduced on 12 April 2011. This Masterplan is aimed at improving further the role of capital market in generating the economy. Among the strategies for CMP 2 are to promote an efficient capital formation, to expand the intermediation function and scope, to facilitate the internalization of the

domestic capital market and to further strengthen the corporate governance practices in order to increase the confidence in the Malaysian capital market.

Throughout the years the Malaysian stock market has made a remarkable development. The market capitalization has increased from only RM131.66 billion in 1990 to RM4,44.35 billion in 2000 and RM1,106.15 billion in 2007, a 740 per cent increase in size within 17 years. Consistently, the market turnover has increased to RM540.17 billion in 2007 from RM244.05 billion in 2000 and RM29.52 billion in 1990. In addition, the number of listed companies increased to 902 companies in 2017 from only 285 companies in 1990 (World Development Indicators (WDI), 2017).

In comparison to other countries, Malaysian stock market was ranked 23 in the world in 1998, being the largest stock market in ASEAN and seventh in Asia (Bank Negara Malaysia, 1999). A study done by Yartey (2008) finds that the Malaysia has the largest stock market (measured by market capitalization divided by GDP) among 42 emerging economies between 1990 and 2004. According to the CMP2's report, Malaysia can be classified as having a well-developed capital market since its market capitalization over GDP is ranged between 90 per cent (2000) to 170 per cent (2010). This indicates that Malaysia has made a remarkable development in its stock market over the years.

1.2 ISSUES AND PROBLEM STATEMENT

In recent years, the Malaysian stock market has becoming an important investment and financing mechanisms for the companies and investors. It is evidenced from the increasing number of listed companies traded on Bursa Malaysia Securities Berhad from only 285 companies in 1990 to 920 companies in 2017. However, the history on economic crisis has shown that the recent policies related to stock market development are not sufficient to

minimize the negative impact of adverse economic movement on the Malaysian stock market, particularly to the market participants. For example during the 1997 economic crisis, the stock market composite index fell from 1,077.3 points in June 1997 to 262.7 points in September 1997, USD$225 billion of shares value were removed from Bursa Malaysia and stock market contracted by 60 per cent (Ariff & Abubakar, 1999).

In the recent 2008 economic crisis, the Bernama reported that the daily average trading value for the stock market was reduced to RM1.3 billion in 2008 compared to RM2.4 billion in 2007, while trading revenue for the stock market slipped by 54 per cent to RM136.8 million in 2008 against RM296.5 million previously. However, in comparison with developed and East Asian countries, Malaysia's GDP growth took a longer time to absorb the negative impact of the crisis. This is because during that period of time, its GDP growth only drop significantly from the third quarter of 2008 and the negative growth was only reported in the first quarter of 2009. This evidence shows that prior to the 2008 U.S Financial Crisis, Malaysia has recorded a strong fundamental economic development. In addition, to reduce the negative impact of global financial crisis, the Malaysian Government has implemented few measures to support the Malaysian economy. Due to that, KLCI also shows and improvement at the end of March 2009 (Yeap & Lean, 2016).

Thus, this scenario indicates that the policies and regulations conducted by the regulators have minimizes the adverse impact of 2008 U.S Financial Crisis on the Malaysian stock market. However, the recent policies are still not sufficient to significantly reduce the negative impact of the financial crisis on the Malaysian stock market. Therefore, the main issue that the regulators and policy makers have to address for an effective policy making decision is what are the determinants of the Malaysian stock market development? The answer to this question, this present study will investigate the factors affecting stock market

development in Malaysia between 2004 and 2016. Other than that, the knowledge on what factors influence the Malaysian stock market might provide useful information to the policy makers in developing an assessing the current policies in the capital market.

There are also several issues and problems related to stock market development. Although bank development brings positive impact to the stock market development (Bell & Rousseau, 2001; El-Nadar & Alraimony, 2013; Rousseau & Xiao, 2007), however, bank development also has found to significantly reduce the level of stock market development (Deidda & Fatouh, 2008). The study indicates that a negative and significant relationship between bank development and stock market development happened because the investors are able to make an investment either in banks or stock markets.

As for inflation, El-Nader and Alraimony (2013) have conducted a study in Jordan. The results find that inflation has a significant and positive on the development of stock market. In contrast, most of the studies (Naceur, Ghazouani & Omran, 2007; Ho, 2017; Phan & Vo, 2013; Ayaydin & Baltaci, 2013) find that inflation has a significant and negative impact on the stock markets. In addition, the studies explain that a higher level of inflation discourages investors to invest in the stock market due to the lower adjusted return.

Furthermore, the last issue to be highlighted is that the Malaysian stock market is an important investment mechanism for the small investors through funds invested in Employees Provident Fund[1] (EPF), Armed Forces Fund (LTAT), Permodalan National Berhad[2] (PNB) and Pilgrims' Fund (LUTH). According to Abdul Rahman (2006), the

[1] [1] For example EPF, a mandatory pension fund for all employees and managed by the government, is the largest institutional investor in Malaysian stock market (Akhtar, 2001)

[2] PNB is an institution established to encourage savings among Bumiputera. It manages the investment from small investors through various funds such as Amanah Saham Nasional (ASN), Amanah Saham Bumiputra (ASB) and Amanah Saham Didik (ASD)

provident and pension funds and unit trusts companies are emerging as a significant force in the Malaysian stock market. For example, the provident and pension funds have contributed 20 per cent to the stock market, accounting for nine per cent of the total market capitalization. The PNB has a stock investment accounted for 8.6 per cent of the Bursa Malaysia total market capitalization. Thus, the statistics have shown an important role played by the Malaysian stock market in providing financing to the companies and long term investment for the small investors through provident and pensions funds and unit trust companies. Therefore, the stock market development efforts and policy making done by various regulatory bodies are essential for increasing the wealth of the Malaysian stock market investors and participants.

1.3 RESEARCH QUESTIONS

Based on discussion above, the research questions are as follows:

1. Does bank development influence stock market development in Malaysia?
2. What is the impact of economic growth on the stock market development in Malaysia?
3. What is the effect of inflation on the stock market development in Malaysia?
4. What is the impact of saving rate on stock market development in Malaysia?

1.4 OBJECTIVES OF THE STUDY

The objectives of this study are as follows:

1. To examine the impact of bank development on stock market development in Malaysia.

2. To investigate the effect of economic growth on the stock market development in Malaysia.

3. To assess the impact of inflation on stock market development in Malaysia.

4. To investigate the effect of saving rate towards stock market development in Malaysia.

1.5 SIGNIFICANCE OF THE STUDY

The findings of the studies are important to many parties. Firstly, the regulator and policy makers will benefit from the understanding of the stock market development's determinants in Malaysia. The information provided in this study may help the policy makers in strengthening and enhancing the effectiveness of policies related to the stock market development. The effectiveness of the policies and regulations are important in enhancing the efficiency of the stock market in providing financing and investment vehicles to the companies and investors. Since, the Malaysian stock market is largely dominated by the institutional investors that representing the investment of the small investors and pensioners (Abdul Rahman, 2006), the well developed and regulated stock market is essential in enhancing and protecting the long term wealth of those investors.

Secondly, this study may assist the fund managers and investors in making their investment decision. For example, the fund managers for unit trust can utilize the information on the factors determining the Malaysian stock market in developing more profitable investment strategies for the long term benefit of investors. Thirdly, the academics will enhance their knowledge on the determinants of the stock market development in Malaysian context. This study could also serve as a guideline for more rigorous future studies in this area.

1.6 SCOPE OF THE STUDY

This study focuses on examining the factors of the stock market development in the Malaysian context. The quarterly data employed is from 2004 to 2016. Furthermore, only four factors of stock market development are considered which are bank development, economic growth, inflation and saving rate. Lastly, this study only focuses on using ordinary least square (OLS) method. Thus, the limitations of this study could be addressed by the future studies.

1.7 STRUCTURE OF THE STUDY

This study is organized into five chapters. Chapter One discusses the definition and the importance of stock market development, overview of stock market development in Malaysia and issues and problem statement. Chapter Two reviews the related literatures on the relationship between bank development, economic growth, inflation and saving rate and stock market development. Chapter Three describes the data, research methodology and the variables employed in this study. Chapter Four provides the discussion on the findings. Finally, Chapter Five concludes the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews the literatures that are related to stock market development and its determinants. Section 2.1 discusses on the theoretical aspect of stock market development. Section 2.2 discusses the empirical evidences on stock market development and its determinants; namely bank development and three macroeconomics determinants; namely economic growth, inflation and saving rate. Lastly, Section 2.3 concludes this chapter.

2.1 THEORETICAL LITERATURE

The stock market development theory becomes a limitation in numerous recent studies. In fact, no particular benchmark for the movement of stock prices. Thus, recent studies have extended the previous model in investigating factors that affecting the stock market development based on institutional and also economic variables as proposed by previous seminal works (Demirguc-Kunt & Levine, 1996; Levine & Zervos, 1996; Stiglitz, 1985).

For example, Ho and Iyke (2016) examine the literature review on the determinants of stock market development which include the macroeconomic factors, institutional factors and microeconomic factors. Most of the previous literatures determine the stock fundamental value by referring to the micro- based asset pricing theories. In addition, they find two general types of factors affecting fundamental value of stock which are stock market-related factors such as the stock market liquidity, stock market volatility (or market risk), foreign industrial production exchange rate economic growth and interest rate. Another factor is

portfolio-related factors such as stock return, the variance of stock return, dividends or earnings, book to market ratios and the company size as suggested by Malkiel and Fama (1970), Fama (1965) and Ross (1976). Rather than focusing on the factors affecting the stock fundamental value, there are many studies (Ho, 2017; Vazakidis & Adamopoulous, 2009) investigating the influence of macroeconomic variables towards stock market development. The most common macroeconomic factors being examined are inflation rate (Kemboi & Tarus, 2012; Phan & Vo, 2013), exchange rate (El-Nader & Alraimony, 2013; Johansson & Kongstad, 2013), trade openness (El-Nader and Alraimony, 2013; Ho, 2017), economic growth (Capasso, 2008; Thanh, Hoai & Van, 2017) and banking development (Bell & Rousseau, 2001; Kemboi & Tarus, 2012).

2.2 DETERMINANTS OF STOCK MARKET DEVELOPMENT

2.2.1 The Impact of Bank Development on Stock Market Development

Financial institutions such as banks accumulate and allocate funds and capital from surplus units to deficit units (Aggarwal & Goodell, 2009). Previous studies on the link between stock market development and bank development have resulted in mixed findings.

On the positive side, few studies have concluded that bank development enhances stock market development. Bell and Rousseau (2001) argue that banks development increases the stock market development in India by promoting the investment in the stock market through fund accumulated by the financial intermediaries over the period of 1951 to 1985. In addition, El-Nadar and Alraimony (2013) have conducted a study in Jordan over the period of 1990 to 2011. The results from variance decomposition and co-integration analyses show a positive relationship between bank development and stock market development.

Similarly, Rousseau and Xiao (2007) also discover that bank development increases the stock market development in China between 1995 and 2005. According to the study, bank development is a factor to be considered in developing the policies on stock market development in China. Moreover, Tarus and Kemboi (2012) have performed a study in Kenyan stock market by investigating the factors that influencing its stock market development between 2000 and 2009. The result of error correction model proves that banking sector development increases the development of Nairobi stock exchange. They argue that the development in the banking institution allows for an easier access to funds that can be used for investment in stock market.

Similarly, Thanh, Hoai and Van (2017) find that the domestic credit has positively influenced the stock market development in 36 developing countries such as Bahrain, China, India, Indonesia, Iran, Kazakhstan, Kuwait, Lebanon, Mongolia, Nepal, Pakistan, Philippines, Qatar and Malaysia between 2003 and 2014. Other cross-country study by Chinn and Ito (2006) also discovers a positive relationship between stock market development and banking system development using 108 countries (including Malaysia) from 1980 to 2000. This study reveals that the banking system development is a necessity for the stock market to develop. The findings are consistent with the "demand for funds" point of view and the Modigliani-Miller theorem (1958) which argues that the companies' sources of funds can be raised from either the stock market or bank in perfect market (Copeland, Weston & Shastri, 2005).

On the negative relationship, few studies have concluded a negative relationship between bank development and stock market development. According to Diamond (1984) and Stigliz (1985) the bank development hinders the stock market development if the bank is in a better position to address the agency problems than the stock market. This means that

bank development is negatively related to the stock market development and thus, proposing that bank acts as a substitute to the stock market.

As for the "supply of fund" point of view, Deidda and Fattouh (2008) reveals the negative and significant relationship between bank development and stock market development because the investors choose to spread their saving either in banks or stock markets, depending on the wealth provided to their investments. Similarly, a study in Malaysia by Ho (2017) using ARDL bounds testing procedure over 1981 to 2015 and finds that banking sector development has a significant and negative affect on the stock market development. Lastly, Thanh et al. (2017) discover that higher level of development in financial intermediary is significantly and negatively related to stock market development in Vietnam. This study has employed money supply and domestic credit as measurement for bank development and both variables conclude that bank development enhances the stock market development between 2003 and 2014.

2.2.2 The Impact of Economic Growth on Stock Market Development

Capital formation has been widely accepted as an important element in economic growth (Habibullah & Eng, 2006). Previous literatures agree that economic growth matters for the stock market development (Levine & Zervos 1996; Levine & Zervos, 1991).

A study by Vazakidis and Adamopoulos (2009) in France from 1965-2007 using a method of Error Correction Model (VECM) and discovers that economic growth influences the stock market development positively. This could due to the fact that economic prosperity encourages more investor in the domestic stock market and finally increases the investment and financing activities.

Similarly, Capasso (2008) finds a positive and significant relationship between stock market and economic growth. In addition, he indicates that a continuous decreasing of information cost and cost of equity relative to debt financing cause economic to growth and at the same time encourages stock market to develop. In addition, Thanh *et al.* (2017) discover that higher development of stock market in developing countries is influenced by higher economic growth rates which show a positive relationship between these two variables.

The positive relationship is also concluded by Raza and Jawaid (2014) and Ho (2017). Raza and Jawaid (2014) have conducted a study in Pakistan using ARDL bound test for the period of 1976 to 2011. Likewise, in Malaysia, Ho (2017) concludes that economic growth is a precondition for the stock market to grow between 1981 and 2015.

On the other hand, a study by Capasso (2006) posits a positive relationship between economic growth and stock market development in 24 OECD countries for a period of 1988 to 2002 using VEC model. The study argues that the size of economy and higher capital accumulation are essential for development of stock market. In addition, according to Salvatore and Capasso (2006), few empirical studies have provided and evidence that economic growth is positively and significantly influence the stock market development.

Lastly, other study conducted by Thanh *et al*. (2017) in Vietnam between 2003 and 2014 and discovers that economic growth is not associated with the stock market development. Thus, this study argues that economic growth is not one of the factors that influencing the level of development in the stock market.

2.2.3 The Impact of Inflation on Stock Market Development

Economics define inflation as the general increase in the price level of goods or services in the economy of one's country. Inflation causes the purchasing power to decrease. Therefore, the ability of the public to consume and invest will reduce as the level of inflation increases. Inflation can cause negative effects on the economy. Uncertainty about the future inflation may discourage investment and this causes inefficiencies in the financial market (Gordon, 1988). Besides that, inflation has been widely accepted as a factor that affects stock return and this would encourage investors to invest in the stock market (Heer & Sussmuth, 2007; Liu & Shrestha, 2008). However, from the review of the related literature, previous studies suggest mixed findings on the relationship between the inflation and stock return.

A seminal work by Fama and Schwert (1977) suggest a negative relationship between inflation and stock returns. In addition, Fama (1981) explains that the negative relationship is explained by the inverse relationship between the inflation and economic activity.

In agreement with the previous seminal works, a study by Naceur, Ghazouani and Omran (2007) reveal that inflation has a significant and negative impact on the emerging stock markets. This study explains that the inflation negatively influenced the stock market development because lower returns caused by the high inflation discourage investors to invest in the stock market. In addition, higher inflation could cause volatility in the economy and provide less incentive for the companies and investors to invest in the stock market. This study has been conducted in 12 MENA countries (Bahrain , Egypt , Iran , Jordan , Kuwait , Lebanon , Morocco, Oman, Qatar ,Saudi Arabia ,Tunisia and Turkey for the period of 1999

until 2002. With respect to sample selected and the time period, inflation is one of the factors to be considered when developing policies on the stock market development.

Similarly, in Malaysia, Ho (2017) using ARDL bounds testing procedure over 1981 to 2015 and discovers that inflation has a significant and negatively affected stock market development. In addition, a cross-country study by Phan and Vo (2013) also concludes that inflation dampens the stock market development in six ASEAN countries; Malaysia, Singapore,Indonesia, Philippines Vietnam and Thailand. The findings also indicate that during the period 1990 to 2008, inflation is one of macroeconomic variable that is important to the stock market development. This is due to the fact that an increasing in inflation leads to the macroeconomic volatility and thus, discouraged investors and firms to participate in the stock market.

A similar result is found by Ayaydin and Baltaci (2013) in 42 emerging economies from 1996 to 2011. The result of regression shows a significant and negative relationship between stock market development and inflation suggesting that stock market is well developed when there is decreasing in inflation rate.

On the positive side, in Nigeria, result of Autoregressive Distributed Lag (ARDL) bound test which used monthly data (1997-2010) and find that there is a co-integration relationship between stock returns and inflation (Ibrahim & Agbaje, 2013). In addition, the result also indicates that inflation has a positive and significant effect on the stock returns. As for study on stock market development, El-Nader and Alraimony (2013) have conducted a study in Jordan over the period 1990 and 2011. The results of variance decomposition and co-integration analyses discover that inflation has a significant and positive on the development of stock market.

Lastly, there are few studies conclude no relationship between inflation and stock. A study by Ali (2010) in Pakistan for the period of June 1990 to December 2008 has concluded

no relationship between inflation and stock return. Similarly, in Thailand, Limpanithiwat and Rungsombudpornkul (2010) also agree that inflation does not have any significant relationship with the stock price.

2.2.4 The Impact of Saving on Stock Market Development

Saving rate measures the level of saving by the government and also public in an economy. According to a study by Mankiw, Romer and Weil (1992) higher level of saving rate is one of crucial factor to measure the long term economic development and also a country's wealth as supported by the Sollow model. Besides, saving is also being used to fund the new capital investments which include investment in stock market.

According to Farhi and Panageas (2005), the investment in the financial assets could be reduced by increasing the level of saving for early retirement. In addition, the findings also argue that an increase in the level of saving increases the investment in stock market, particularly during the economic booming.

Even though the role of stock markets in channeling savings from borrowers to the lenders has becoming more important (Deidda & Fattouh, 2008), previous studies suggest mixed findings on the relationship between savings and the stock market development.

On the positive side, Levine and Zervos (1998) which have conducted a study in 47 countries for the period of 1976 to 1993 and discover a positive relationship between stock market development and the level of saving. Similarly, this finding is also supported by Cherif and Gazdar (2010).They have conducted a study on 14 MENA countries (Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar ,Saudi Arabia, Tunisia,

Turkey, Bahrain and Malta) for the period of 1990-2007. Their study reveals that higher saving rate provides the stock market with the higher level of funds and resulted in an active stock market trading (Garcia & Liu, 1999; Naceur, Ghazouani & Omran, 2007).

In the same vein, a study in Nigeria over a period of 2001 to 2010 using OLS regression model reveals that saving rate has a significant and positive impact on stock market development. Ebele (2016) also finds that in Nigeria, saving is one of important determinants that influence the stock market development. This is because saving helps to improve the living standard and they also use the accumulation of the saving to invest in securities to get return in the future.

In addition, Habibullah and Eng (2006) argue that without savings there is no investment activity. Thus, a significant flow of saving must be generated and transferred into productive investment to preserve the financial sector development. This study has been conducted in 13 Asian developing countries: Thailand, Malaysia, Singapore, Pakistan, Philippines, Bangladesh, South Korea, India, Myanmar, Lao PDR, Indonesia, Nepal and Sri Lanka for the period of 1990-1998.

Moreover, a study by Ayaydın and Baltaci (2013) in 42 emerging economies from 1996 to 2011 also concludes a positive and significant impact of saving rate towards stock market development. The finding indicates that higher saving rate enhances the stock market development as more capital will be transferred by companies to the stock market.

In contrast, Yartey (2008) posits that the level of savings in South Africa is not associated with the stock market development. The study has investigated the stock market

development and its determinants (institutional and macroeconomic) from 1990 to 2004 for 42 countries.

2.3 CONCLUSION

In conclusion, this section provides the discussion on the previous literature that investigated the relationship between stock market development and its determinants (bank development, economic growth, inflation and saving rate). Based on the studies conducted in both developing and developed countries, the associations between stock market development and its determinants are found to be mixed.

CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

This chapter focuses on the methodology employed and the data collection. Ordinary Least Square (OLS) has been employed to test the relationship between selected variables (bank development, economic growth, inflation rate and saving rate) and stock market development. Besides that, statistical method such descriptive statistics, correlation analysis and also diagnostic tests have been employed in this study. Section 3.1 presents the data description, Section 3.2 defines all the variables, Section 3.3 shows the research framework, Section 3.4 discusses the methods used and lastly Section 3.5 is the conclusion for this chapter.

3.1 DATA DESCRIPTION

The data employed in this study is based on the secondary data collected from the monthly statistical bulletin provided by the BNM. This study utilizes the time-series data which has been collected quarterly from the year 2004 to 2016. The total observations for this study are 52. The data collection covers the information on real GDP, total market capitalization, total gross national saving, total amount of CPI and total loan to private sector.

3.2 DEFINITION OF VARIABLES

The dependent and independent variables employed are as follows:

3.2.1 Dependent Variable (Stock Market Development)

This study employs stock market capitalization, which is defined as the total market capitalization over GDP, as the indicator for the stock market development because it has been widely used as a measurement for the overall stock market size in an economy (Yartey , 2008). Furthermore, N' Zue (2006) and Yartey (2008) find that the total size of the stock market positively related to its capability in diversifying risk and mobilizing fund efficiently. In addition, a country with the well-developed stock markets tends to have a larger stock market relative to the size of the economy (Tang, 2006). Besides, the stock market capitalization is less arbitrary as compared to other measures of the stock market development, such as the number of listed companies (Yartey, 2008).

3.2.2 Independent Variables

3.2.2.1 Bank Development

In this study, the total loan to private sector divided by GDP is a proxy to measure the bank development. This is because the total loan to private sector is able to convey information on the efficiency of banking sector in allocating the fund to the private sector. Besides that, this proxy has been widely used in other studies (Bell & Rousseau, 2001; El Nader & Alraimony, 2013; Tarus & Kemboi, 2012). They argue that the development in the banking institution allows for an easier access to funds that can be used for investment in stock market. Thus, the

relationship between bank development and stock market development is expected to be positive.

3.2.2.2 Economic Growth

This study employs the percentage change in real GDP as a measure of economic growth. This variable has been widely used in the previous studies related to economic growth and its impact towards stock market development (Ho, 2017; Levine & Zervos, 1998; N'Zue, 2006; Tang, 2006). This variable is also chosen because it captures the long term impact of the economic growth (Levine & Zervos, 1998) on the stock market development. According to Capasso (2008), Thanh *et al.* (2017) and Raza and Jawaid (2014), economic growth influences the stock market development positively. This could due to the fact that economic prosperity encourages more investor in the domestic stock market and finally increases the investment and financing activities. Therefore, the expected relationship between economic growth and stock market development is positive.

3.2.2.3 Inflation

This study also uses the consumer price index (CPI) because it is widely used to measure the inflation in previous studies (Jung, Shambora & Choi, 2007; Merikas & Merika, 2006). Furthermore, a study done by Ibrahim (1999) in Malaysia also uses CPI as a macroeconomic variable to measure inflation. Few studies have discovered a negative relationship between inflation and stock market development (Ayaydin & Baltaci, 2013; Ho, 2017; Phan & Vo, 2013). In addition, higher inflation could cause volatility in the economy and provide less incentive for the companies and investors to invest in the stock market. Thus, the relationship between inflation and stock market development is expected to be negative.

3.2.2.4 Saving Rate

The total gross national saving divided by GDP is employed to measure the level of saving in this study because this variable is more appropriate measure of savings available to finance capital formation in an economy (Agrawal, 2001). In addition, the gross national saving is chosen because it includes both the private and government savings and it is considered to be a better measure of the level of saving in the economy as whole. Previous studies have concluded a positive relationship between saving rate and stock market development (Ayaydin & Baltaci, 2013; Ebele, 2016; Yartey, 2008). These studies argue that higher saving rate provides the stock market with the higher level of funds and resulted in an active stock market trading (Garcia & Liu, 1999; Naceur, Ghazouani & Omran, 2007). Therefore, the expected finding between saving rate and stock market development is positive.

Thus, table 3.1 below illustrates the variables, definitions and also sources of data collection.

Table 3.1 : Variables, Definition and Data Sources

NO	VARIABLES	DEFINITION	SOURCES	EXPECTED FINDINGS
1	Stock Market Development (SMD)	Total market capitalization	BNM	
2	Bank Development (LPS/GDP)	Total loan to private sector	BNM	POSITIVE
3	Economic growth (CRGDP)	The percentage change in real GDP	BNM	POSITIVE
4	Inflation (INF)	Consumer price index	BNM	NEGATIVE
5	Saving rate (GNS/GDP)	The total gross national saving	BNM	POSITIVE

3.3 RESEARCH FRAMEWORK

Consistent with the discussion above, the theoretical framework for this study is shown in Figure 1:

Figure 1: The Theoretical Framework

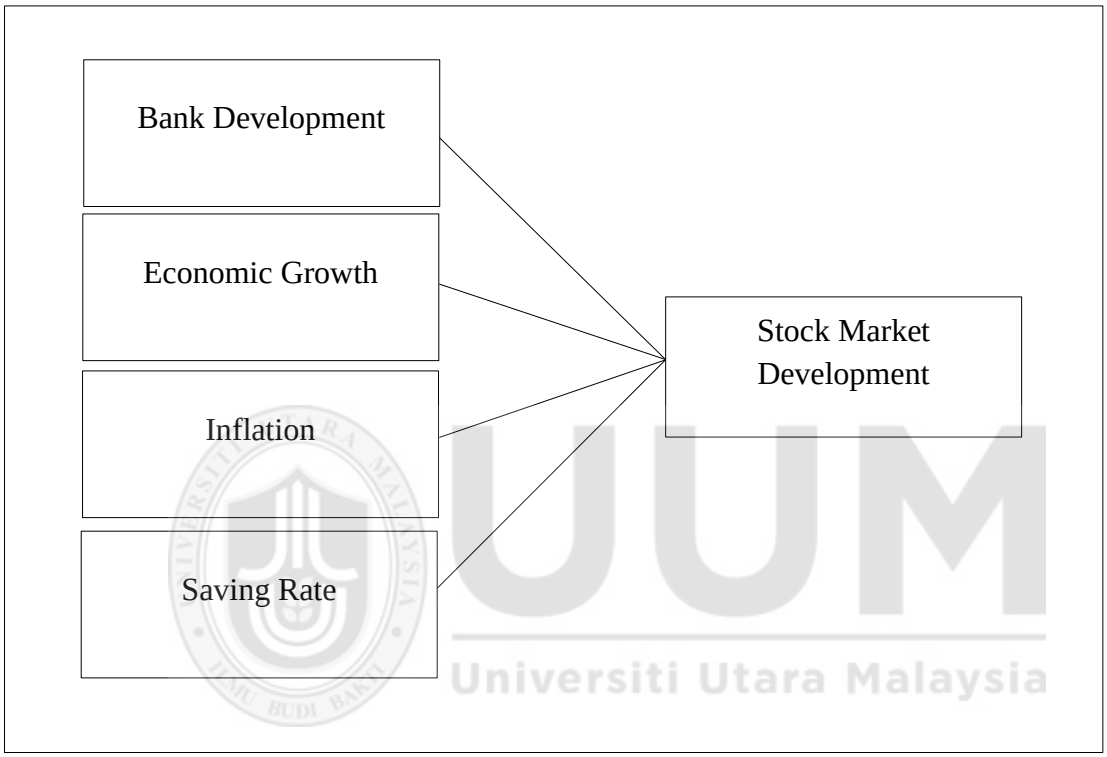


Figure 1 shows the relationship between stock market development and its determinants. The relationships between the bank development, economic growth, and saving rate are expected to be positive with the stock market development. Thus, bank development, economic growth and saving rate are assumed to enhance the stock market development. However, a negative relationship is expected between inflation and the stock market development, suggesting that the higher the inflation the lower the stock market development.

3.4 ECONOMETRICAL METHODOLOGY

This section describes methods for the data analysis. The methods employed include descriptive analysis, correlation analysis, multiple regression analysis and also diagnostic tests.

3.4.1 Descriptive Statistic

This test is useful in defining the basic structures of data used in the study. This method summarizes the quantitative measures of data employed in the regression model. It presents the maximum value, minimum value, mean and standard deviation (Wooldridge, 2015).

3.4.2 Correlation Analysis

In order to measure the relationship between variables, coefficient correlation has been employed. The coefficient ranges from -1 to +1 to show the strength of relationship between variables. However, no relationship exists between two variables when the coefficient is 0. Besides, the direction of the coefficient can be measured in a negative or a positive way (Wooldridge, 2015).

3.4.3 Diagnostic Tests

This study also utilized the diagnostic tests in order to check the existence of problems that arises due to the misspecification of regression model. The tests include normality test, multicollinearity test, heteroscesdaticity test and auto-correlation test.

3.4.3.1 Normality Test

This test is used to ensure that the error term is normally distributed by employing the Jarque-Bera test. The p-value of Jarque-Bera must be more than 0.05 significance level to indicate that the error term is normally distributed (Fiorentini, Sentana, & Calzolari, 2004; Jarque & Bera, 1980)

3.4.3.2 Multicollinearity Test

According to Kraha, Turner, Nimon, Zientek and Henson (2012), multicollinearity is a problem that could jeopardize the reliability of the multiple regression findings. Centered Variance Inflation Factor (VIF) is used to detect the multicollinearity problem. VIFs of more than 10 are an indication of a serious multicollinearity problem. It shows the presence of high correlation among the independent variables.

3.4.3.3 Heteroscedasticity Test

Heteroscedasticity test is used to check whether the variance of error term is constant or not. This study employs the Breusch-Pagan-Godfrey Test to detect the heteroscedasticity problem. The probability of the test must be more than 5 percent to show that there is no heteroscedasticity problem (Bar, 2016).

3.4.3.4 Autocorrelation

This test is utilized to check the existence of the relationship between the variables' value which indicates that the residuals are related to each other (Stock & Watson, 2007). The Breush-Godfrey Serial Correlation LM test has been conducted in this study. If the p-value exceeds 0.05, thus, autocorrelation problem does not exist.

3.4.4 Multiple Regression Analysis (OLS)

The model employed in this study is adopted from Yartey (2008) and Naceur, Ghazouani and Omran (2007). The multiple regression analysis is tested using the Eviews 9. The model employed in this study is:

$$SMD_t = \beta 0 + \beta 1\ LPS/GDP_t + \beta 2\ CRGDP_t + \beta 3\ INF_t + \beta 4\ GNS/GDP_t + \varepsilon$$

Where:

Dependent variable (measures of the stock market development)

SMD_t = Total market capitalization divided by GDP at time t

Independent Variables

LPS/GDP_t = Total loan to private sector divided by GDP at time t

$CRGDP_t$ = The percentage change in real GDP at time t

INF_t = The percentage of consumer price index (CPI) at time t

GNS/GDP_t = The total gross national saving divided by GDP at time t

ε = Error term at time t

3.5 CONCLUSION

This chapter explains the methodology applied in the study. Other than that, this chapter also discusses the data, variables and also the research framework. In addition, all the data employed in this study is collected from the BNM's website. Lastly, the discussion on OLS model and diagnostic tests are also been made in detail.

CHAPTER FOUR

RESULTS AND ANALYSIS

4.0 INTRODUCTION

This chapter provides the discussions on the findings of this study. The sections include: Section 4.1 discusses on the descriptive statistics, Section 4.2 elaborates the results on the correlation analysis, Section 4.3 presents the results on the diagnostic tests, Section 4.4 provides the discussion on the results provided by the multiple regression analysis and lastly Section 4.5 is the conclusion for this chapter.

4.1 DESCRIPTIVE ANALYSIS

Descriptive statistics on the dependent and independent variables are given in table 4.1.

Table 4.1: Descriptive Statistic

Variables	Minimum	Maximum	Mean	Standard Deviation
Stock Market Development (RM/Billion)	658.560	1778.020	1176.178	392.481
Bank development (RM/Million)	29200.020	94444.480	55623.470	17820.430
Economic Growth (%)	-6.200	10.100	5.042	2.682
Inflation (Weight (2000 =100))	102.167	116.500	108.877	4.108
Gross National Saving (RM/Million)	358996.900	1194508.000	774352.000	264762.400

Table 4.1 shows a summary of descriptive statistics of all the variables which comprise of minimum, maximum, mean and standard deviation. These variables are stock market development, bank development, economic growth (GDP), inflation and saving rate. Based on the 52 observations, the mean of stock market development is RM1,176.178 billion while the maximum value is RM1,778.020 billion and the standard deviation is RM3,92.481 billion.

The mean values for bank development and economic growth are RM55,623.470 million and 5.042 per cent while their standard deviation are RM17,820.430 million and 2.682 per cent respectively. The maximum value of the bank development is RM94,444.480 million and minimum value is RM29,200.020 million. Meanwhile, the maximum and minimum values of economic growth are 10.100 per cent and -6.200 per cent respectively.

Inflation has a mean value of 108.877 for the period of the study. The maximum and minimum values are 116.500 and 102.167 respectively. Furthermore, a mean and standard deviation of RM774,352.000 million and RM264,762.400 million are observed for the saving rate. The maximum and minimum values of saving rate are stood at RM1,194,508.000 million and RM358,996.900 million respectively.

4.2 CORRELATION ANALYSIS

Table 4.2 presents the result of Pearson correlation.

Table 4.2: Pearson Correlation

	Stock Market Development	Inflation	Gross Domestic Product	Total Loan to Private Sector	Gross National Saving
Stock market development	1				
Inflation	0.274273	1			
Gross domestic product(GDP)	0.112214	-0.257695	1		
Bank Development	0.335921	-0.054355	-0.026995	1	
Saving	0.960619	0.413754	-0.085592	0.350093	1

Table 4.2 shows that inflation, economic growth (GDP), bank development and saving rate are having a positive relationship with stock market development as their coefficient range is more than 0 with the positive direction among variables. The strongest positive relationship is found between saving rate and stock market development. The second strongest positive relationship is between bank development and stock market development followed by inflation (0.274273) and GDP (0.112214). From the table, the weakest positive relationship is between economic growth and stock market development.

4.3 DIAGNOSTIC TESTS

Diagnostic test have been conducted to check the robustness of the standard error. The tests consist of normality test, multicollinearity test, heteroskesdasticity test and also auto correlation test.

4.3.1 Normality Test

Table 4.3: Jarque-Bera Test

Jarque Bera	P-value
0.951927	0.621286

Table 4.3 shows the Jarque-Bera's result of the normality test. The p-value is more than 0.05 significance level. Thus, the data used in this model is normally distributed.

4.3.2 Multicollinearity Test

The VIF test is used to check the existence of the multicollinearity problem among the independent variables employed in this study. Neter, Wasserman and Kunter (1983) suggest that a VIF of less than 10 is an indication that multicollinearity is not a serious problem.

Table 4.4: Variance Inflation Factor (VIF)

Independent Variables	Centered VIF
Bank development	1.209445
Economic Growth (GDP)	1.075280
Inflation	1.362198
Saving Rate	1.453151

Table 4.4 indicates that the VIF for all variables are less than 10. Therefore, the multicolinearity is not a serious problem in this study.

4.3.3 Heteroskedasticity Test

Breusch-Pagan-Godfrey Test is used to detect the heteroscedasticity problem. If the p-value exceeds 0.05, thus there is no heteroskedasticity problem.

Table 4.5: Heteroscedasticity Test: Breusch-Pagan-Godfrey

Obs*R-squared	Prob. Chi-Square
2.388550	0.6647

From the result above, p-value is more than 0.05 levels, thus, this indicates that there is no heteroscedasticitiy problem exists in this model.

4.3.4 Auto Correlation Test

In order to test the auto correlation problem, this study employed the Breusch-Godfrey Serial Correlation LM Test. The p-value should be more than 0.05 to show that there is no autocorrelation problem.

Table 4.6: Breusch-Godfrey Serial Correlation LM Test

Obs*R-squared	Prob. Chi-Square
19.33148	0.0001

Based on the result in the table above, the p-value is less than 0.05 which indicates that this model has the autocorrelation problem and must be corrected using the appropriate technique.

From the Breusch-Godfrey Serial Correlation LM Test, the autocorrelation problem is presence in this model. Therefore, a corrected OLS regression model is conducted by using the HAC Consistent Covariance (Newey-West) provided by the E-Views 9.

4.4 REGRESSION ANALYSIS

The findings for multiple regressions are presented in Table 4.3.

Table 4.7: Multiple Regression Analysis

Variables	Pooled Regression (N=52) Coefficient (t-value)	Corrected Regression (N=52) Coefficient (t-value)
Bank Development	-0.000566 (6.502384)	-0.000566 (-0.810937)
Gross Domestic Product	25.10872 (6.502384) ***	25.10872 (6.157356)***
Inflation	-10.39415 (-3.663071) ***	-10.39415 (-3.059666)***
Saving Rate	0.001526 (33.55450) ***	0.001526 (27.93745)***
Constant	1031.226 (3.337195) ***	1031.226 (2.714068)***
R-Squared	0.969564	0.969564
Adjusted R-squared	0.966973	0.966973
F-statistics	374.3035	374.3035
Prob (F-statistics)	0.000000	0.000000
N	52	52

Note: * Significant at the 0.10 level, **Significant at the 0.05 level, *** Significant at the 0.01 level. The dependent variable is the stock market development.

Table 4.7 shows the results of regression analysis of pooled and corrected OLS. Due to the auto-correlation problem, discussion will only focus on the corrected regression model. The R-squared for this model is 96.96 per cent which indicates that the independent variables used in the model have a reasonably high explanatory power in predicting the stock market development. The F-statistics and the P-value (F-statistics=374.3035 and P-value=0.000) for these model are significant at 1% level. Thus, it can be concluded that the model used in this study has a reasonably high explanatory power. However, the constant is significant at 1%

level, which suggested that other explanatory variables may also explain the Malaysian stock market development. Therefore, this issue could be addressed in the future research in this area. In addition, the findings show that economic growth and saving rate have a positive and significant relationship with the stock market development while inflation has negative and significant relationship with the stock market development. Nonetheless, bank development is not the factor that influences stock market development.

4.4.1 Bank Development

The finding in table 4.3 indicates a negative but insignificant relationship between bank development and stock market development. Thus, it shows that bank development is not the factor for promoting the stock market development in Malaysia between 2004 and 2016. This finding is in line with the previous study by Naceur and Ghazouani (2007). The finding also indicates that the efficiency of banking system in providing loan to the private sector is not associated with the stock market development. According to Demetriades and Hussein (1996), high level of government control in the banking system might slow the process of the financial market development, including the stock market development. This could explain the insignificant relationship between bank development and stock market development in the Malaysian context.

4.4.2 Economic Growth

The result shows that economic growth has a positive and significant relationship with the stock market development. The finding indicates that the economic growth enhances the stock market development in Malaysia. The finding is consistent with the previous literatures (Capasso, 2008; Raza & Jawaid, 2014; Vazakidis & Adamopoulos, 2009). In addition, this

finding also in line with the "demand-following" phenomenon (Partrick, 1966), which suggests that the economic growth increases the stock market development. This could due to the fact that economic prosperity encourages more investors in the domestic stock market and finally increases the investment financing activities. Moreover, higher development of stock market is influenced by higher economic growth rate (Ho, 2017; Thanh et al., 2017).

4.4.3 Inflation

The finding of this study posits that inflation rate has a negative and significant relationship with stock market development. This indicates that the ability of the public to consume and invest reduces as the level of inflation increases. The finding is consistent with the previous studies (Naceur et al., 2007; Phan & Vo, 2013). One of the possible reasons that inflation negatively influenced the stock market development is because lower returns caused by the high inflation discourage investors to invest in the stock market. Thus, a well-developed stock market exists when there is a decreasing in inflation rate (Ayaydin & Baltaci, 2013).

4.4.4 Saving Rate

The last independent variable is saving rate. The result of regression shows a positive and significant relationship between saving rate and stock market development. This finding is consistent with the previous studies (Cherif & Ghazdar, 2010; Ebele, 2016; Habibullah & Eng, 2006) that the saving rate is positively and significantly associated with the stock market development. According to a study by Mankiw, Romer and Weil (1992) higher level of saving rate is one of crucial factor to measure the long term economic development and also a country's wealth. Besides that, saving is also being used to fund the new capital investments which include investment in stock market. Thus, higher saving rate provides the stock market

with the higher level of funds and resulted in an active stock market trading (Garcia & Liu, 1999; Naceur, Ghazouani & Omran, 2007).

4.5 CONCLUSION

In conclusion, this study reveals that economic growth and saving rate have significantly enhanced the stock market development in Malaysia from 2004 to 2016. On the other hand, inflation has found to significantly reduce the stock market development. However, bank development shows an insignificant impact towards stock market development.

CHAPTER FIVE

CONCLUSION AND SUMMARY

5.0 INTRODUCTION

Stock market allows investors to contribute funds to the companies for their operation and development. Thus, the development of stock market is very important for every country because a well-developed stock market provides an effective risk diversification, enhances information disclosure of the companies and increases the corporate governance practice (Levine & Zervos, 1996). According to Obstfeld (1994), the effectiveness of risk diversification in stock market promotes the investments in higher return projects, therefore resulted in overall output growth. Thus, this indicates that stock market able to boost a country economic growth. A well-developed stock market is also essential in mitigating agency-principal problems by enhancing the corporate control (Jensen and Murphy, 1990). Therefore, the factors determine the stock market development can be from the country's financial system and macroeconomic backgrounds (Garcia & Liu, 1999; Naceur, Ghazani & Omran, 2007; Yartey, 2008).

There are four objectives that have been tested in this study. The first objective is to examine the impact of bank development on stock market development in Malaysia. The second objective is to investigate the effect of economic growth on the stock market development in Malaysia meanwhile the third objective is to assess the impact of inflation on stock market development in Malaysia and lastly, the fourth objective is to investigate the effect of saving rate towards stock market development in Malaysia.

The data employed in this study is based on the secondary data collected from the monthly statistical bulletin provided by the BNM by utilizing the time-series data which has been collected quarterly from the year 2004 to 2016. The data collection covers the information on real GDP, market capitalization, gross national saving, CPI and loan to private sector. Those data has been employed to answer the objectives of the research. In addition, descriptive analysis has been conducted to analyse the structure of variables in the regression model. Then, OLS regression has been employed to test the relationship between bank development, economic growth, inflation and saving rate with stock market development.

This chapter categorizes as follows: Section 5.1 summarizes the findings. Section 5.2 provides discussion on implication of study. Next, Section 5.3 discusses the contribution of the study. Section 5.4 presents the limitations and directions for future research and lastly, Section 5.5 concludes this chapter.

5.1 SUMMARY OF THE FINDINGS

This study has empirically examined the determinants of the Malaysian stock market development using quarterly data from 2004 to 2016. The empirical analysis provides three interesting findings. Firstly, the economic growth and saving rate are major determinants in enhancing the Malaysian stock market development. Secondly, the inflation is found to influence the stock market development negatively. Thirdly, bank development has an insignificant association with the stock market development. In conclusion, in the Malaysian context, only economic growth, saving rate and inflation are the determinants of stock market development. On the other hand, bank development is not the factor that influencing the development of stock market in Malaysia.

5.2 POLICY IMPLICATIONS

The findings of this study have provided important policy implications in Malaysia. Firstly, the economic growth, inflation and saving rate have a major influence on the Malaysian stock market development. Thus, the policies and regulations targeted at improving those variables could have a significant impact in promoting the stock market development.

Secondly, since the banks and stock market developments are competing rather than complementing, the policy makers have to equally balance the efforts in developing both banks and stock market as an important financing and investment vehicles in Malaysia. The policy makers need to ensure that any efforts done in banking system development do not hurt the stock market development because both of them are providing services that are equally important for Malaysian development.

For example, in Malaysia, the CMP 2 was introduced to improve the existing role of capital market in generating the economy. The strategies of CMP 2 are to promote an efficient capital formation, to expand the intermediation function and scope, to facilitate the internalization of the domestic capital market, to build capacity and to further strengthen the information infrastructure in order to increase the investors' confidence in the Malaysian capital market.

In addition, the findings of the study will also provide guidance for the fund managers in developing a profitable investment strategy that are suitable for investment in the Malaysian stock markets. This is because this study provides more reliable findings related specifically to the determinants of the Malaysian stock market development.

5.3 CONTRIBUTION OF THE STUDY

This study provides two main contributions. The first is the theoretical contribution. The findings would add into the existing literature on the relationship between stock market development and its determinants (bank development, economic growth, inflation and saving rate) in Malaysia. Meanwhile, the second is the practical contribution. Regulators and policy makers will benefit from the understanding of the stock market development's determinants in Malaysia. The information provided in this study may help the policy makers in strengthening and enhancing the effectiveness of policies related to the stock market development. Besides, this study may assist the fund managers and investors in making their investment decision.

5.4 LIMITATIONS AND DIRECTIONS FOR THE FUTURE RESEARCH

This study suggested few areas for future research. Firstly, future research might investigate other determinants that could be important for the stock market development in Malaysia, for example the institutional quality, capital controls, bond development and financial liberalization. Secondly, future research may also investigate the differences between the stock market determinants in Malaysia and other Asian countries. Finally, the causality study between the determinants of the stock market development and stock market development in Malaysia can also be the area of the future research.

5.5 CONCLUSION

In conclusion, this study concludes that economic growth and saving rate have significantly enhanced the stock market development in Malaysia from 2004 to 2016 while inflation has found to significantly reduce the stock market development. Thus, bank development shows

an insignificant impact towards stock market development. Even though there are few limitation in this study, however, both research questions and objectives has been answered by using selected method.

REFERENCES

Abdul Rahman, R. (2006). Effective corporate governance. First Edition. University Publication Centre (UPENA), UiTM, Shah Alam.

Agrawal. P. (2001). The relation between savings and growth: cointegration and causality evidence from Asia. *Applied Economics*, 33(4), 499-513.

Aggarwal, R., & Goodell, J. W. (2009). Markets versus institutions in developing countries: National attributes as determinants. *Emerging markets review*, *10*(1), 51-66.

Ali, I. (2010). Causal relationship between macro-economic indicators and stock exchange prices in Pakistan. *African Journal of Business Management*, 4(3), 312-319.

Allen, F. and Gale, D. (1997). Financial markets, intermediaries and intertemporal smoothing. *Journal of Political Economy* 105(3), 523-546.

Ariff, M. and Abubakar, S.Y. (1999) The Malaysian financial crisis: economic impact and recovery prospects. *The Developing Economies,* XXXVII(4), 417-438.

Ayaydın, H., & Baltaci, N. (2013). Corruption, banking sector, and stock market development: A panel data analysis. *Management*, 94-99.

Bar, M. (2016). Introduction to econometrics. San Francisco State University.Department of economics.

Bell, C. and Rousseau, P.L. (2001). Post-independence India: A case of finance-led industrialization? *Journal of Development Economic*, 65(1), 153-175.

Capasso, S. (2006). Endogenous information frictions, stock market development and economic growth. *The Manchester School*, 76, 1463-6786.

Capasso, S. (2008). Endogenous information frictions, stock market development and economic growth. *The Manchester School*, 76(2), 204-222.

Cherif, M., & Gazdar, K. (2010). Macroeconomic and institutional determinants of stock market development in MENA region: New results from a panel data analysis. *International Journal of Banking and Finance*, 7(1), 139-159.

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

Copeland, T.E. Weston, J.F. and Shastri, K. (2005). Financial theory and corporate policy. Fourth Edition. Addison Wesley. New York .

Deidda, L. and Fattouh, B. (2008). Banks, financial market and growth. *Journal of Financial Intermediation*, 17(1), 6-36.

Demetriades, P. and Hussein, K. (1996). Financial development and economic growth:cointegration and causality tests for 16 countries. *Journal of Development economics*, 5, 387-411.

Demirguc-Kunt, A. and Levine, R. (1996). Stock markets and financial intermediaries: stylized facts. *The World Bank Economic Review*, 10(2), 291-321.

Diamond, D.W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51, 393-414.

Ebele, N.S (2016). Appraisal of the Effect of Savings on Stock Market Development in Nigeria. *Journal of Economics and Sustainable Development*, 7(2), 174-182.

El-Nader, H. M., & Alraimony, A. D. (2013). The macroeconomic determinants of stock market development in Jordan. *International Journal of Economics and Finance*, 5(6), 26-40.

Fama, EF. (1965). The behaviour of stock-market prices. *The Journal of Business*, 38(1), 34-105.

Fama, E. F. (1981). Stock returns, real activity, inflation, and money. *The American Economic Review*, 71(4), 545-565.

Fama, E. F., & Schwert, G. W (1977). Asset returns and inflation. *Journal of financial economics*, 5(2), 115-146.

Farhi, E. and Panageas, S. (2005). Saving and investing for early retirement: a theoretical analysis. *Working Paper Series.*

Fiorentini, G., Sentana, E., & Calzolari, G. (2004). On the validity of the Jarque–Bera normality test in conditionally heteroskedastic dynamic regression models. *Economics Letters*, 83(3), 307-312.

Garcia, V.F. and Liu, L. (1999). Macroeconomic determinants of stock market development. *Journal of Applied Economics* II, (1), 29-59.

Gordon, R. (1988). Macroeconomics: Theory and policy. Second Edition. New York: McGraw-Hill.

Habibullah, M.S. and Eng, Y.K.(2006). Does financial development cause economic growth? A panel data dynamic analysis for the Asian Developing Countries. *Journal of the Asia Pacific Economy 1,* (4), 377-393.

Heer, B. and Sussmuth, B. (2007). Effects of inflation on wealth distribution: Do stock market participation fees and capital income taxation matter? *Journal of Economic Dynamics & Control*, 31(1), 277-303.

Ho, S. Y., Njindan Iyke, B., (2016). Determinants of stock market development: A review of the literature. *Studies in Economics and Finance*, 34(1), 143-164.

Ho, S. Y. (2017). The Macroeconomic Determinants of Stock Market Development: Evidence from Malaysia. University of South Africa.

Ibrahim, M.H.(1999). Macroeconomic variables and stock prices in Malaysia: an empirical analysis. *Asian Economic Journal*, 13(2), 219-231.

Ibrahim, T. M., & Agbaje, O. M. (2013). The relationship between stock return and inflation in Nigeria. *European Scientific Journal*, ESJ, 9(4).

Jarque, C. M., & Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics letters*, 6(3), 255-259.

Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of political economy*, *98*(2), 225-264.

Johansson, D., & Schou Kongstad, A. (2013). The Determinants of Stock Market Development: Implications of a Dynamic Panel Data Model. MSc in Finance Thesis. *School of Economics and Management, Lund University,1-42.*

Jung, C., Shambora, W., & Choi, K. (2007). The relationship between stock returns and inflation in four European markets. *Applied Economics Letters*, *14*(8), 555-557.

Kemboi, J. K., & Tarus, D. K. (2012). Macroeconomic determinants of stock market development in emerging markets: Evidence from Kenya. *Research Journal of Finance and Accounting*, 3(5), 57.

Kraha, A., Turner, H., Nimon, K., Zientek, L. R., & Henson, R. K. (2012). Tools to support interpreting multiple regression in the face of multicollinearity. *Frontiers in psychology*, 3.

Levine, R. and Zervos, S. (1996). Stock market development and long run growth. *World Bank Economic Review*, 10(2), 323-340.

Levine, R. and Zervos, S. (1998). Stock markets, banks and economic growth. *American Economic Review*, 88, 537-558.

Limpanithiwat, K., & Rungsombudpornkul, L (2010). Relationship between inflation and stock prices in Thailand. *Master Thesis in Finance*.

Liu, M.H. and Shrestha, K. (2008) Analysis of the long-term relationship between macroeconomic variables and the Chinese stock market using heteroscedastic conintegration. *Managerial Finance*, 34(11), 744-755.

Malkiel, B.G., and Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383-417.

Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A contribution to the empirics of economic growth. *The quarterly journal of economics*, 107(2), 407-437.

Merikas, A.G. and Merika, A.A.(2006). Stock prices response to real economic variables: the case of Germany. *Managerial Finance*, 32(5), 446-450.

Naceur, S. B., & Ghazouani, S. (2007). Stock markets, banks, and economic growth: Empirical evidence from the MENA region. *Research in International Business and Finance*, 21(2), 297-315.

Naceur, S.B. Ghazouani, S. and Omran, M. (2007). The determinants of stock market development in the Middle-Eastern and North African region. *Managerial Finance*, 33(7), 477-489.

Neter, J., Wasserman, W. and Kunter, M. (1983). Applied Regression Models. Richard D. Irwin, Homewood.IL

N'Zue, F.F. (2006). Stock market development and economic growth: evidence from Cote D'Iviore. *The Author Journal compilation @ African Development Bank*, 123-145.

Obsfeld, M. (1994). Risk-taking, global diversification and growth. *American Economic Review*, 84(5), 1310-1329.

Patrick, H. T. (1966). Financial development and economic growth in underdeveloped countries. *Economic development and Cultural change*, *14*(2), 174-189.

Phan, D. N., & Vo, T. H. H. (2013). Determinants of stock market development in South-east Asian countries. *Journal of Economics and Development*, 44(1), 101-112.

Raza, S. A., & Jawaid, S. T. (2014). Foreign capital inflows, economic growth and stock market capitalization in Asian countries: an ARDL bound testing approach. *Quality & Quantity*, 1-11.

Ross, S. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, 13(3), 341-360.

Rousseau, P. L., & Xiao, S. (2007). Banks, stock markets, and China's 'great leap forward'. *Emerging Markets Review*, 8(3), 206-217.

Salvatore, Capasso (2006). Stock market development and economic growth, *Research Paper UNU-WIDER*, United Nations University (UNU).

Stock, J. H., & Watson, M. W. (2007). Introduction to econometrics. Retrieved from: *https://www.ssc.wisc.edu.*

Stigliz, J.E. (1985). Credit market and the control of capital. *Journal of Money, Credit and Banking*, 17(2), 133-152.

Tang, D. (2006). The effect of financial development on economic growth: evidence from the APEC countries. *Applied Economics*, 38(16), 1889-1904.

Thanh, S. D., Hoai, B. T. M., & Van Bon, N. (2017). Determinants of stock market development: The case of developing countries and Vietnam. *Journal of Economic Development*, (JED, Vol. 24 (1)), 30-51.

Vazakidis, A., & Adamopoulos, A. (2009). Stock market development and economic growth. *American Journal of Applied Sciences*, 6(11), 1932-1940.

Wooldridge, J. M. (2015). *Introductory econometrics: A modern approach*. Nelson Education.

Yartey, C.A. (2008). The determinants of stock market development in emerging economies: is South Africa Different? *IMF Working Paper.*

Yeap G.P., & Lean H. H., (2016). Macroeconomic volatility on stock prices volatility during global financial crisis in Malaysia. *School of Social Sciences, Universiti Sains Malaysia, Malaysia,* 14(16), 1-13.

APPENDIX A

Dependent Variable: MCAP
Method: Least Squares
Date: 09/21/17 Time: 14:50
Sample: 1 52
Included observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOAN	-0.000566	0.000616	-0.919029	0.3628
GDP__2010_	25.10872	3.861463	6.502384	0.0000
CPI	-10.39415	2.837551	-3.663071	0.0006
SVG	0.001526	4.55E-05	33.55450	0.0000
C	1031.226	309.0099	3.337195	0.0017

R-squared	0.969564	Mean dependent var	1176.178
Adjusted R-squared	0.966973	S.D. dependent var	392.4812
S.E. of regression	71.32638	Akaike info criterion	11.46362
Sum squared resid	239110.3	Schwarz criterion	11.65124
Log likelihood	-293.0542	Hannan-Quinn criter.	11.53555
F-statistic	374.3035	Durbin-Watson stat	0.876455
Prob(F-statistic)	0.000000		

Variance Inflation Factors
Date: 09/21/17 Time: 14:51
Sample: 1 52
Included observations: 52

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LOAN	3.80E-07	13.22376	1.209445
GDP__2010_	14.91090	4.949269	1.075280
CPI	8.051696	976.9404	1.362198
SVG	2.07E-09	14.12699	1.453151
C	95487.12	975.9954	NA

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.565705	Prob. F(4,47)	0.6887
Obs*R-squared	2.388550	Prob. Chi-Square(4)	0.6647
Scaled explained SS	2.150542	Prob. Chi-Square(4)	0.7081

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 09/21/17 Time: 14:52
Sample: 1 52
Included observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25830.82	30386.90	-0.850064	0.3996
LOAN	-0.002006	0.060611	-0.033094	0.9737
GDP__2010_	229.2391	379.7222	0.603702	0.5489
CPI	306.4459	279.0344	1.098237	0.2777
SVG	-0.005140	0.004472	-1.149381	0.2562

R-squared	0.045934	Mean dependent var	4598.275
Adjusted R-squared	-0.035263	S.D. dependent var	6893.484
S.E. of regression	7013.975	Akaike info criterion	20.64041
Sum squared resid	2.31E+09	Schwarz criterion	20.82803
Log likelihood	-531.6506	Hannan-Quinn criter.	20.71234
F-statistic	0.565705	Durbin-Watson stat	1.838191
Prob(F-statistic)	0.688721		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	13.31430	Prob. F(2,45)	0.0000
Obs*R-squared	19.33148	Prob. Chi-Square(2)	0.0001

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 09/21/17 Time: 14:53
Sample: 1 52
Included observations: 52
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOAN	0.000278	0.000503	0.553160	0.5829
GDP__2010_	-2.177317	3.301008	-0.659591	0.5129
CPI	0.765127	2.304427	0.332025	0.7414
SVG	-1.60E-05	3.71E-05	-0.431718	0.6680
C	-75.80186	250.7406	-0.302312	0.7638
RESID(-1)	0.728313	0.144324	5.046368	0.0000
RESID(-2)	-0.248562	0.148612	-1.672562	0.1014

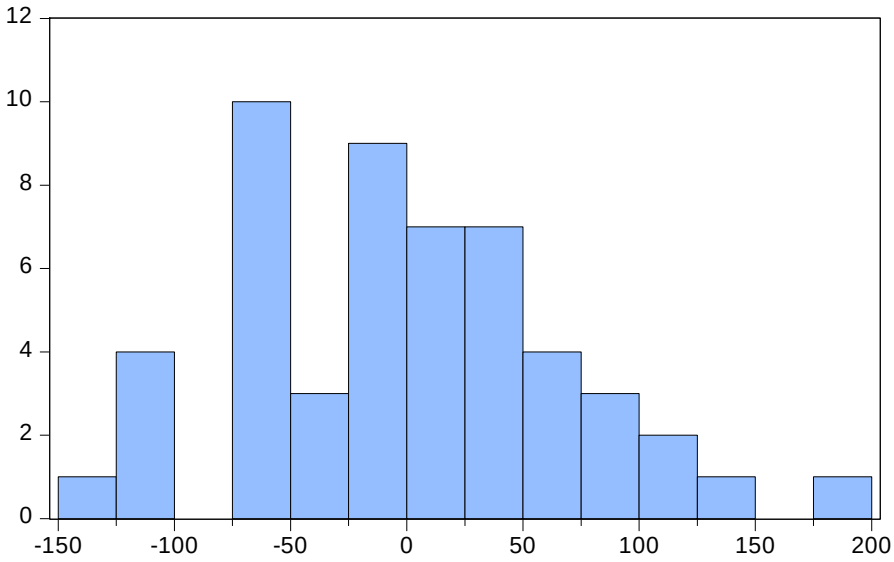
R-squared	0.371759	Mean dependent var	-1.86E-13
Adjusted R-squared	0.287994	S.D. dependent var	68.47216
S.E. of regression	57.77712	Akaike info criterion	11.07571
Sum squared resid	150218.8	Schwarz criterion	11.33838
Log likelihood	-280.9685	Hannan-Quinn criter.	11.17641
F-statistic	4.438100	Durbin-Watson stat	2.043974
Prob(F-statistic)	0.001317		

DESCRIPTIVE STATISTICS

	MCAP	LOAN	GDP__2010_	CPI	SVG
Mean	1176.178	55623.47	5.041687	108.8769	774352.0
Median	1104.570	52049.74	5.350000	108.6000	709765.3
Maximum	1778.020	94444.48	10.10000	116.5000	1194508.
Minimum	658.5600	29200.02	-6.200000	102.1667	358996.9
Std. Dev.	392.4812	17820.43	2.682094	4.108105	264762.4
Skewness	0.120299	0.521458	-2.262278	0.127642	0.183618
Kurtosis	1.518513	2.244167	9.904774	1.698821	1.686253
Jarque-Bera	4.880835	3.594407	147.6529	3.809516	4.031720
Probability	0.087124	0.165762	0.000000	0.148859	0.133206
Sum	61161.27	2892421.	262.1677	5661.601	40266304
Sum Sq. Dev.	7856115.	1.62E+10	366.8749	860.7027	3.58E+12
Observations	52	52	52	52	52

CORRELATION

	MCAP	LOAN	GDP__2010_	CPI	SVG
MCAP	1.000000	0.335921	0.112214	0.274273	0.960619
LOAN	0.335921	1.000000	-0.026995	-0.054355	0.350093
GDP__2010_	0.112214	-0.026995	1.000000	-0.257695	-0.085592
CPI	0.274273	-0.054355	-0.257695	1.000000	0.413754
SVG	0.960619	0.350093	-0.085592	0.413754	1.000000



Series: Residuals	
Sample 1 52	
Observations 52	
Mean	-1.86e-13
Median	-1.974075
Maximum	193.2630
Minimum	-139.8106
Std. Dev.	68.47216
Skewness	0.315296
Kurtosis	3.204218
Jarque-Bera	0.951927
Probability	0.621286

Dependent Variable: MCAP
Method: Least Squares
Date: 09/21/17 Time: 14:54
Sample: 1 52
Included observations: 52
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOAN	-0.000566	0.000699	-0.810937	0.4215
GDP__2010_	25.10872	4.077840	6.157356	0.0000
CPI	-10.39415	3.397153	-3.059666	0.0037
SVG	0.001526	5.46E-05	27.93745	0.0000
C	1031.226	379.9559	2.714068	0.0093

R-squared	0.969564	Mean dependent var	1176.178
Adjusted R-squared	0.966973	S.D. dependent var	392.4812
S.E. of regression	71.32638	Akaike info criterion	11.46362
Sum squared resid	239110.3	Schwarz criterion	11.65124
Log likelihood	-293.0542	Hannan-Quinn criter.	11.53555
F-statistic	374.3035	Durbin-Watson stat	0.876455
Prob(F-statistic)	0.000000	Wald F-statistic	336.0198
Prob(Wald F-statistic)	0.000000		