Universiti Utara Malaysia

Bank Lending and stock market performance:
Evidence from ASEAN Banks

AHMED ABBAS HUSSEIN

MASTER OF SCIENCE (FINANCE)
UNIVERSITI UTARA MALAYSIA
JUNE 2016

Bank Lending and stock market performance:
Evidence from ASEAN Banks

By

Ahmed Abbas Hussein

Thesis Submitted to
School of Economics, Finance & Banking (SEFB)
Universiti Utara Malaysia
In Partial Fulfillment of the Requirement for the Master of Sciences
(Finance)

PERMISSION TO USE

In presenting this dissertation/project paper in partial fulfillment of the requirements 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/project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or in their absence, by the Dean of School of Economics, Finance & Banking (SEFB). Where I did my dissertation/project paper. It is understood that any copying or publication or use of this dissertation/project paper 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/project paper.

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

Dean of School of Economics, Finance & Banking (SEFB)

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

i

ABSTRACT

The purpose of this study is to examine the impact of bank lending on bank stock performance through a panel data evidence on banks in ASEAN. The data for this study is retrieved from the DataStream. The sample consists of 68 listed banks from six countries (Indonesia, Malaysia, Singapore, Philippines, Thailand, and Vietnam) in ASEAN for the period 2000-2014. The results of the Panel Ordinary Least Square estimation showed that bank loans has a negative significant association with the stock performance of banks in ASEAN, implying that the fluctuations in bank lending negatively influence stock price movements, which then reduces stock returns. Bank size shows a positive and significant relationship with bank stock performance, indicating that the size of banks positively influences their stock performance since all the banks selected for this study are large banks listed on the stock exchange of their various countries in ASEAN. Bank capitalization and bank stock performance are positively related, implying that the capital of banks in ASEAN influences their stock performance because these banks have higher capital to asset ratio which make them to have a better margin of cushion and continuous profitability even during difficult periods. Net interest margin has a positive significant relationship with bank stock performance, indicating that interest margin has a positive influence on bank stock performance since ASEAN banks are well capitalized and more effective and which lead to increase in their stock performance. It is recommended that ASEAN banks need to improve in their bank lending policies by increasing their bank loan supply so as to influence stock price movements, and then improve stock returns.

Keywords: Bank lending, loan, capitalization, size, net interest margin, stock performance.

ABSTRAK

Tujuan kajian ini adalah untuk mengkaji kesan pemberian pinjaman bank kepada prestasi saham bank melalui bukti berdasarkan data panel di bank-bank di ASEAN. Data untuk kajian ini diambil daripada sumber Datastream. Sampel kajian terdiri daripada 68 bank yang disenaraikan dari enam buah negara ASEAN (Indonesia, Malaysia, Singapura, Filipina, Thailand, dan Vietnam) bagi tempoh 2000-2014. Keputusan Panel Biasa anggaran Square menunjukkan bahawa pinjaman bank mempunyai hubungan yang signifikan tetapi negatif dengan prestasi saham bank-bank di ASEAN. Ini membayangkan bahawa turun naik dalam pinjaman bank adalah negatif dan mempengaruhi pergerakan harga saham, yang kemudiannya mengurangkan pulangan pada saham. Saiz Bank pula menunjukkan hubungan yang signifikan dan positif dengan prestasi saham bank, menunjukkan bahawa saiz bank secara positif mempengaruhi prestasi saham mereka kerana semua bank-bank terpilih untuk kajian ini adalah bank-bank besar yang disenaraikan di bursa saham pelbagai negara mereka dalam ASEAN. Permodalan Bank dan prestasi saham bank secara positif, membayangkan bahawa modal bank-bank di ASEAN mempengaruhi prestasi saham mereka kerana bank-bank ini mempunyai modal yang lebih tinggi kepada nisbah aset yang membuat mereka mempunyai margin yang lebih baik daripada margin keuntungan yang berterusan walaupun semasa tempoh sukar. Margin faedah bersih pula mempunyai hubungan yang signifikan dan positif dengan prestasi saham bank, menunjukkan bahawa margin faedah mempunyai pengaruh yang positif ke atas prestasi saham bank kerana bank-bank ASEAN yang mempunyai modal yang mencukupi dan lebih berkesan serta membawa kepada peningkatan dalam prestasi saham mereka. Disyorkan bahawa bank-bank ASEAN perlu meningkatkan dalam dasar pinjaman bank mereka dengan meningkatkan bekalan

iii

pinjaman bank mereka untuk mempengaruhi pergerakan harga saham, dan kemudian meningkatkan pulangan saham.

iv

ACKNOWLEDGEMENT

بسم الله الرحمن الرحيم

Bismillahir Rahmanir Rahim. All my praises and gratitude to Allah, the Merciful for bestowing me patience, strength and excellent health for completing this research. After all, once again, I am so much grateful to Allah for meeting with many wonderful people who, with His Grace, have helped me tremendously in the successful completion of this research. From the beginning I would like to thank Universiti Utara Malaysia for giving me this great opportunity to achieve my educational goals throughout my Master of Science (Finance) programme. I also wish to thank my supervisor **Dr. Sabri bin Nayan** for his thoughtful guidance, patience and fabulous suggestions throughout the period of the research.

Special dedicated to my dearest parents and all my family for constant support, patience and understanding, giving a great support throughout the duration of my studies and unceasing prayers for my success.

Finally, my heartfelt gratitude thank to my University in Iraq has given me the opportunity to complete postgraduate master. Thanks again everyone, including those who I have probably forgotten to mention here.

Thank you.

Ahmed Abbas Hussein
June 2016

TABLE OF CONTENTS

Table of Contents

LIST OF APPENDICES

LIST OF TABLES

LIST OF ABBREVIATIONS

ASEAN – Association of South East Asian Nations

AEC – ASEAN Economic Community

BI – Bank of Indonesia

BNM – Bank Negara Malaysia

BoT – Bank of Thailand

BSP – Bangko Sentral ng Pilipinas

IMF – International Monetary Fund

MAS – Monetary Authority of Singapore

CAPM – Capital Asset Pricing Model

APT – Arbitrage Pricing Theory

ICAPM – Intertemporal Capital asset Pricing Model

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The relationship between stock market performance and financial institutions are gradually significant in determining economic development. For instance, stock market performance influence economic activity by for ways, which include investment spending, household wealth effects, household liquidity effects, as well as company balance-sheet effects (Karim, Lih & Karim, 2012). Therefore, a strong economic development usually go along with a strong financial market since it transfers its impacts to the real sectors. In modern days, the progressively developing of financial institutions plays a significant part in giving financial aid to the organizational growth. However, the rising significance of stock market and financial institution's development has made many to ask critical questions whether or how stock prices predict future bank lending activities, and whether or how bank loans play a significant part in transferring its financial shock to the real sectors (Karim et al., 2012). According to Almutair (2015) most economists believe that stock prices predict future economic performance. Therefore, stock market performance plays a significant part in predicting economic performance (Levine & Zervos, 1998). Moreover, study had shown that most stock markets indicators are hugely related with banking institution performance while majority of the advanced stock markets have established banking sectors (Demirguc-Kunt & Levine, 1996). In addition, companies located in countries with well-developed banks and stock markets develop quicker than predicted by individual company characteristics (Demirguc-Kunt & Maksimovic, 1996). Consequently, the stock prices have to reflect numerous macroeconomic variables in order to show current economic

1

growth. When stock price reveals all the macroeconomic factors, it may serve as a better predictive instrument for prospective bank lending undertakings since the stock markets indicators are the macroeconomic factors which decide bank lending (Yartey, 2008). Furthermore, the fundamental relationship between bank lending activities and stock market performance has played a significant part in providing stronger understanding of banking exposure and the stock price instrument in the real market world (Ibrahim, 2006). Moreover, the intrinsic banking sector fragility to the contagious crisis has caused many dependent on bank specifically stock markets to breakdown.

Virulent vibrations were sent to numerous sectors of the economies hit by the 1997/1998 Asian crisis. The crisis that started from the successful speculative attack on Thailand's Thai baht and spread to other East and Southeast Asian countries through "herding" behavior among portfolio investors and result into reversals of portfolio capitals. Due to this, the stock markets of the affected countries plummeted in amounts unexpected by many. As result of the increase in bank lending exposure to speculative industries (i.e. property and share industries) and intrinsic banks' fragility in the lead years to the financial crunch, the collapse of the stock market and the currencies extend to the banking industry. The contraction in bank loans vibrated to the real sector, while confidence of the investors shattered by the breakdowns of the financial markets (Athukoralge, 2001). As the crisis hit its deepness in 1998, all countries affected experienced severe decline in the growth of their economic. Various issues were revived and intensified by the crisis, including market efficiency hypotheses, stock return predictability, financial contagion, advantage of international diversification and international financial integration, causes of the crisis, among others. While these various issues had been discussed by the contemporary studies,

a neglected part in this on-going awareness in the correlations between economic and financial variables is the fundamental role of stock price volatilities to the behavior of bank lending. In the case of the economies affected by the crisis, this aspect of causal relationship is of crucial imperative due to the tenacious need to understand the vulnerability of banking and proliferation instruments of financial shocks. Particularly, to the point that shares and real property are used as collaterals for bank loans, drop in share price exposes bank to defaulting risks, and then negatively influence behavior of banks' loan supply (Bacha, 1998; Kim & Moreno, 1994). Therefore, based on the awareness given to stock markets after the 1997/1998 Asia financial crisis and the 2008 global financial crisis, couple with their potential influence on banks, the relationship between stock market performance and bank lending activities need empirical analysis. Empirically despite the huge attention to the banks' role in the economy specifically in measuring monetary transmission instruments, their relationships to stock market performance have been neglected.

In addition, contemporary asset pricing studies also pay little attention to financial sectors, particularly banks. For instance, in a broadly referred study of Fama and French (1992) on cross-section of stock returns, they deliberately excluded financial stocks because they intend to examine the pricing effect of stock returns and leverage and do not want to combine financial sectors with industrial sectors since the leverage ratio of financial sectors are usually much higher (Xu, 2010). Financial stocks are also excluded by most of the subsequent studies on asset pricing so as to be consistent with previous findings. Even in some studies (Barber & Lyon, 1997; Cooper et al., 2003) that examined financial stocks, the initial assumption is generally that the factors of pricing revealed in the non-financial sectors are also applicable to the financial stocks. These studies characteristically build on

3

the factors of pricing proposed by Fama and French (1992) on non-financial sectors and directly apply them to financial sectors specifically banks. Inadvertently or intentionally, applying the factors in a different sector has not been examined.

Based on the specific financial sectors nature, which include heavily regulated and highly leverage it seems plausible that the orthodox pricing factors might not provide similar correlation with bank stock compare to other sectors. Theories of banking economics and financial intermediaries can also proffer the basis for positing some correlation between bank stocks and bank-specific characteristics that might be untraditional in the current asset pricing studies. However, such prospects have not been thoroughly investigated in the present studies.

1.1 Problem Statement

Although, banks role in the economy has attracted huge attention specifically in the assessment of monetary transmission; however, their relationships to stock market performance have received low attention (Ibrahim, 2006). Few studies which include Ibrahim (2006), Kim and Moreno (1994), and Karim et al. (2012) are the only studies that focus on the relationship between bank loans and stock prices. While Kim and Moreno (1994) find that stock price changes has positive effects on bank lending in Japan, Ibrahim (2006) also finds that stock price has positive effect on bank loans, but bank loans does not influence stock price in Malaysia. Karim et al. (2012) find that bank loans and stock prices are independent, indicating that the stock price predictability cannot be improved significantly through making use of bank loans information. These show inconsistent results of previous studies relating to bank lending and stock performance, thus there is

4

need for more studies in order to minimize the inconsistency of the results (Aviat & Coeurdacier, 2007; Jeanneau & Micu, 2002; Kawai & Liu, 2002; Rose & Spiegel, 2004).

In addition, before the 1997 Asian financial crisis, many Asian firms rely on bank loans for financing and working capital, but during the crisis there has been a severe fall in stock market performance and reduction in bank lending (Ibrahim, 2006). Therefore, since the two variables have strengthened their relationship empirically in recent years, there is need to reexamine the association between stock market performance and bank lending for the case of ASEAN.

Furthermore, the focus of banking studies has long been the financial institutions performance (Siregar & Choy, 2010). The previous findings have clear effects on bank management in which to enhance performance and also for decision and policy makers that are concerned with bank soundness, bank safety, and bank competitiveness (Waheed & Mathur, 1993). Numerous research on the association between bank lending and bank stock performance were done on developed countries (Barber & Lyon, 1997; Cooper et al., 2003) and very limited on developing countries. This creates research gap in the study of bank stock performance as differences in the characteristics of developing countries (i.e. political environment, culture, economy) limit the applicability of the findings of develop countries to the developing countries (Siregar & Choy, 2010).

Although, there are some studies on bank lending and bank stock performance but the results are inconsistent. Thus, inconsistent results of previous studies also creates gap in the study of bank performance because there is need for more studies in order to minimize the inconsistency of the results (Aviat & Coeurdacier, 2007; Jeanneau & Micu, 2002;

5

Kawai & Liu, 2002; Rose & Spiegel, 2004). In addition, most studies on bank lending and stock performance focused on non-financial sector and very few were done on financial sector specifically banking institutions (Siregar & Choy, 2010). Therefore, there is need for more studies on risk management to focus on banking institution due to the vast growth and importance of banking institution in the economy.

Hence, the goal of this research is to add to the related studies by examining the impact of bank lending on stock performance applying data from the major markets in ASEAN from 2000-2014. The concentration of this study is on ASEAN stock markets due to improved economic collaboration which is according to the ASEAN treaty, the effective financial reforms, and the memorable emerging markets structure.

1.2 Research Questions

1. What is the relationship between bank loans and banks stock returns?

2. What is the relationship between bank capitalization and banks stock returns?

3. What is the relationship between bank size and banks stock returns?

4. What is the relationship between bank net margin and banks stock returns?

1.3 Research Objectives

1. To examine the relationship between bank loans and banks stock returns.

2. To determine the relationship between bank capitalization and bank stock returns.

3. To investigate the relationship between bank size and bank stock returns.

4. To analyze the relationship between net interest margin and bank stock returns.

1.4 Significance of the Study

This study will be of importance to other researchers, policy maker, and practitioners within and outside the region of ASEAN. This study will be of useful to research because it contributes to body of knowledge of banking studies especially on the relationship between bank lending and bank stock returns. The result of this empirical research is useful to other researchers. It is advantageous due to its contribution to body of knowledge especially on the association between bank lending and bank stock return. This study also provides evidence of the relationship between bank loans, bank size, bank capitalization, net margin, with bank stock returns in ASEAN. This study will be of important to policy makers because it will facilitate the formulation of monetary policies regarding bank lending, and also to promote effective risk culture through enforcing the implementation of an effective risk management on banks for creation of measures and prevention against any possible threat of financial crisis on the economy. It is of importance to practitioners by showing the value of bank lending variables on bank performance, and enables them to improve their risk management practice.

1.5 Scope and Limitation of the Study

The data used for this study are limited and applicable to conventional commercial listed banks in ASEAN. The data consist of 68 banks from six countries (Indonesia, Malaysia, Singapore, Philippines, Thailand, and Vietnam) from the period 2000 to 2014.

However, the findings and the recommendations are beneficial for financial firms, non-financial firms, financial analysts, governments, managers, researchers, stakeholders, accountants and all other concerned users.

1.6 Organization of the Study

Chapter one contains the study's introduction. Chapter two focus on reviewing literatures on this study. Chapter three discusses the methodology. Meanwhile, chapter four deals with the analyses of the data used for this study and chapter five entails conclusion and recommendation of this study.

1.7 Summary of the Chapter

This chapter expatiated on the need for bank lending and stock market performance, and the relationship between the two variables. It also focus on the issues that motivated the need for this study. The research questions on how does bank loans, bank size, bank capitalization, bank net margin influence bank stock performance. The research objectives are to examine the influence of bank loans, bank size, bank capitalization, bank net margin on bank stock performance. The study is useful for researchers, policy maker, and practitioners within and outside the region of ASEAN.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

An understanding on what this research involves was provided by earlier chapter by expounding on the views of researchers on bank loans, bank size, bank capitalization, net interest margin and bank stock performance. However, this present chapter entails details of the previous studies' findings on bank loans, bank size, bank capitalization, net interest margin and their impact on bank stock performance. The aim is to develop the probable relationship between bank lending variables and bank stock performance. This chapter is divided into seven sections. Section 2.1 discussed the monetary policies in ASEAN. Section 2.2 gives an overview on economic growth and financial liberalization in ASEAN. Section 2.3 gives a summary of the ASEAN stock market. Section 2.4 expressed past studies on the influence of bank loans on bank stock performance. Section 2.5 discussed on the earlier studies on the effect of bank capitalization on bank stock performance. Section 2.6 discussed the previous studies on the influence of bank size on bank stock performance. Section 2.7 discussed the past researches on the influence of bank net margin on bank stock performance.

2.1 The Monetary Policies in ASEAN

2.1.1 Indonesia

Bank Indonesia (BI) is an independent central bank that carries out the monetary policy in Indonesia. The major policy framework of the bank is targeting inflation by keeping it between 7 to 9 percent. BI applies the Bank Indonesia reference rate (i.e. rate for a 1-month

certificate of deposit) as an intermediate target. The bank's board set the BI reference rate every month. Before the financial crisis BI has been applying a teeming peg exchange rate system so as to achieve and maintain the stability of its currency (Rupiah) value. At that period, Indonesia is categorized as country executing a managed floating system by the International Monetary Fund (IMF). However, the Rupiah was fundametally pegged to the US dollar with a stable depreciation rate that is regularly announced once every year. Severe burden of depreciation during the financial crisis led to BI to abandon the exchange rate system and adopt an open system in a context of strong base money targeting. It was implemented in order to hold inflation and restore confidence in the currency. In the attempt of achieving base money targeting, BI adopt an open market operation instrument through selling of BI's certificate. Conventionally, Indonesia monetary policy changed significantly after the crisis. In order to establish independence of BI, a new central banking law was enacted in 1999. Due to the act, BI adopt an inflation targeting framework by fixing a target for inflation every year as well as the direct monetary policy to realize it. In recent year, BI has moved from targeting base money to targeting an interest rate (the 30-days SBI rate) in order to attain BI monetary policy.

2.1.2 Malaysia

Bank Negara Malaysia (BNM) is the independent Central Bank that determines the monetary policy in Malaysia. The major objective of their policy is to achieve a suitable balance between sustaining price stability and attaining the maximum viable economic growth level. BNM adopt Overnight Policy Rate (OPR) has policy rate. BNM constitutes a monetary policy committee that meets eight times in a year to deliberate on the inflation

and economic position, and to discuss the suitable monetary policy decision. The Governor is solely responsible for the monetary policy stance. Malaysia floated its currency (ringgit) by moving away from pegging it against the US in July 2005. BNM only intrudes in the market in order to minimize volatility, and also to avoid fundamental misaligned of exchange rate.

2.1.3 Philippines

The Bangko Sentral ng Pilipinas (BSP) is the Central bank in the Philippines that carries out the monetary policy under the framework of inflation targeting. They targeted the headline inflation at 4-5 percent in the year 2007. The monetary board of BSP meets every six weeks to decide on the position of BSP on monetary policy, which include adjustments of key policy rates, that involve the repurchase rate and the reverse repurchase rate, as well as other monetary instruments. BSP practice floating exchange rate with infrequent scope to decrease excessive exchange rate volatilities.

The risk of rise in inflation was one of the main constraints faced by BSP in 2006 because of the hikes in oil price. The determination of BSP was concentrated on tackling the risks of inflation and related inflation anticipations. Its important position was to lead inflation in the direction of the target. This needed a cautious understanding assessment of the risks that affect the inflation target. BSP's Monetary Board maintained steady policy rates all through 2006 on anticipations of a convenient stance over the policy perspective.

2.1.4 Singapore

The Monetary Authority of Singapore (MAS) carried out the monetary policy of Singapore established on managing a trade-weighted exchange rate. The MAS permits the fluctuation of the exchange rate within bands, which is not disclose; neither do the exchange rate composition was disclose. The investment and monetary policy meeting is used in deciding on the monetary policy, though the frequency of their meetings was not disclosed. They have three policy options, which include realigning the central parity as a one-off; changing the gradient of the bands in order to permit the exchange rate to appreciate or depreciate; or broaden the band in order to give room to volatility.

The justification behind this selected behavior was primarily due to the characteristics of the Singapore economy which is open and small. In this scenario, the exchange rate is regarded as the impeccable intermediary target for monetary policy in upholding stability of price. The high level of financial honesty and the capital flows sensitivity to interest rate discrepancies cause difficulty in targeting either interest rates or money supply in Singapore. The net cash flows from overseas describe majority of fluctuations in local interest rates and local money supply are usually determined by both market expectations and foreign rates on the future effect of the Singapore dollar.

2.1.5 Thailand

The bank of Thailand (BoT) is an independent central bank in Thailand that is responsible for setting and implementing monetary policy. Thailand monetary policy has developed over time has the country apply a pegged exchange rate up till 1997. BoT was forced to implement a floating exchange rate and adoption of a monetary targeting system in

actualizing its monetary policy due to the 1997 financial crisis. In regards to the pegged exchange rate earlier adopted, BoT conducted the management of the liquidity everyday so as to avoid excess of liquidity and volatility of interest rates in the financial system. A broad reevaluation of both the domestic and external environment was done in May 2000, and they make the decision to change to adopting inflation targeting framework to steer its monetary policy (Devakula, 2001, Phuvanatnaranubala, 2005). Their inflationary target ranges from 0 to 3.5 percent. The meeting of the Monetary Policy Committee is held every six weeks to discuss changes to the policy rate of the banks (the 14 day repurchase rate). On the 13th of December 2006 BoT announced changing the policy rate to one day repurchase rate. They also implement a managed float of the Thai Baht as the exchange rate policy, where the currency value is mainly determined through market forces with mediation by BoT only to avoid excess of volatility.

2.1.6 Vietnam

The State Bank of Vietnam handled the monetary policy in Vietnam. The Bank is presently targeting a deceleration of credit growth to 20 per cent. It attains its goals mostly through applying two policy rates, the refinancing rate and the rediscount rate. Formally, the State Bank of Vietnam operate a floating currency, however it is actually peg against the US dollar. Vietnam has very stringent capital controls that allow it to sustain the peg.

2.2 Economic Growth and Financial Liberalization in ASEAN

An extraordinary record of dependable great economic growth for ASEAN in the last two decades deserve attention. ASEAN is one of the fastest growing regional groups all over the world. For the period 1987-1992, the real GDP growth rate of the ASEAN-Five (Malaysia, Indonesia, Singapore, Thailand and the Philippines) is an average of 7.3%. The average growth rate of 2.8% was higher than that of developed market economies. Exceeded 2.5% achieved by North America and 2.2% achieved globally (Tongzon, 1998). Independently, annual real GDP growth rate of ASEAN- five for 1987-1995 was approximately 9% for Thailand, Singapore and Malaysia, while the Philippines and Indonesia achieved 3.3% and 6.6% respectively (Chia & Pacini, 1997). Meanwhile, the total GDP growth for ASEAN from the period 2001 to 2013 is approximately 313% that surpasses 294% for Australia, 100% for European Union, 257% for India, 20% for Japan, 137% for Korea, 65% for Taiwan, and 57% for United States (Asia Matters for America). The policies on financial liberalization undertaken in sincere in ASEAN since the beginning of 1970s add to their economic success (Chia & Pacini, 1997; Ariff, 1996). These transformations tried to increase the mobility of the domestic capital, and encourage inflow of international capital. As early as 1973, there have been liberalization in the financial sector of Singapore and Malaysia. The transformation of the financial sectors was implemented by opening markets to international impacts, eradicating deposit interest rate restrictions, and eliminating the capital and current account limitations. The same transformations were embarking on a decade later in Thailand, Indonesia, and the Philippines. In the mid-1980s Thailand and Indonesia made attempts toward achieving full financial liberalization through eliminating the interest rate ceiling and opening the capital

15

and current accounts. In early 1990s, ASEAN have applied another movement of liberalization policies. Singapore and Malaysia concentrated on the development in capital markets. While Malaysia provided an investor protection, Singapore provided investors a preferential tax treatment. Indonesia implemented a policy to improve deposit yields and develop financial institutions in 1988. In 1990, Thailand incorporated a banking transformation through expanding the banking business scope and liberalization of branches. Concomitantly, the Philippines approved a new foreign investment law permitting up to 100% foreign ownership in a number of firms and removed all regulations on foreign exchange limitations. Overall, structured and steady transformations in both financial and real sectors have improved the effectiveness of the financial systems in ASEAN.

2.3 The ASEAN Stock Market

The global capital forming process presents an exceptional experience to the capital markets of ASEAN. When the ASEAN stock markets started in the early 1980s, investors from recession-bound Japan and depressed European countries were attracted by the huge margin of profit from these markets. In addition, money managers from Japan, Europe, and United States pumped short-run credit into ASEAN region between 1993 and 1996, which then heated the economies of Malaysia, Indonesia, and Thailand. Between the periods 1988-1991 and 1993-1996 the total foreign investment inflow into the "Asian-Gang of Five" (i.e. Korea, Thailand, the Philippines, Malaysia and Indonesia) rise steeply up to approximately $70 billion (Biers, 1998). Due to this huge inflow of foreign investment, and financial deregulation and liberalization undertaken locally, the ASEAN capital markets had been booming.

The market trading systems in ASEAN are continuous trading where all the listed securities are offered for trading throughout the whole period the markets are open for trading. It gives room to participants in the markets to get more perfect information relating to the trading volume and quotations. ASEAN markets does not permit insider trading and short sales. Traded securities does not lead to instant delivery. As an alternative, number of days used for settling, delivering, and making payment of a market trade are differ; as Thailand used three working days, Singapore and Malaysia use seven working days. In regards to foreign investment, separate regulations govern foreign investment in each markets, as well as the repatriation of capital and income. Singapore and Malaysia have no significant limitations on purchasing of shares by foreign investment; but Thailand and Indonesia have some special restriction concerning registration ownership of foreign investors. The

Philippines allowed foreign investors to trade fully in some certain class of stocks selected for foreigners.

In the past two decades, the fast economic growth in ASEAN was complemented by an unbelievable rise in the size of the stock markets. For seven-year period, the highest percentage increase in market capitalization amounting to 816.38% was experienced by Indonesia. The growth rate of Malaysia for the same period was 360.20%, Singapore has 83.6%, Thailand has 211.81%, and the Philippines has 637.66% (World Stock Exchange Fact Book, 1997). The improvement in market capitalization started from both significant increases in listed firms and the price appreciation of listed firms. This huge growth in market capitalization may be described as the developing market miracle. Though, the financial crisis in July 1997 brought the ASEAN markets into collective financial crash. This contagious influence shows that ASEAN stock markets are closely related.

From the International Country Risk Guide (ICRG), Price (1994) presents the risk ratings of the ASEAN markets. The ranking put into consideration economic, political, and financial issues. In 1992, based on the above-mentioned considerations, the stock market of Philippines was regarded as the least attractive, trailed by the Indonesian and Thai markets. Palac -McMiken (1997) also measures risks and returns of ASEAN stock market from the market volatility and investment return. He found that the stock market that bears the maximum risks and returns is the stock market of Indonesia. The Thailand and the Philippines stock markets have the same level of returns however the Thai market is less risky, making it reasonably more attractive to investors. Singapore and Malaysia markets have low risk that attracted low returns.

In 2009, the ASEAN advance to ASEAN Economic Community (AEC) for founding market base as well as cooperating together to reinforce the region. The beginning of ASEAN Exchanges relationship between seven stock markets from six countries in ASEAN has been established. These comprise stock market of Singapore, Philippine, Indonesia, Malaysia, Thailand, Hanoi and Ho Chi Min; hope to make the expediency for investment and funding in the region. There are 3,613 firms listed in the seven stock markets. Total value of the stock market is 1,980.37 billion USD which is ranked eighth in the world according to World Federation of Exchanges (2013).

2.4 Bank Loans and Bank Stock Performance

Kim and Moreno (1994) examine the historical association between bank lending and stock prices in Japan, with aim of showing whether changes in bank lending is influenced by movement in stock price. The data for the study were monthly data which is from the period 1/1970 – 5/1993 using vector autoregressive. Their findings indicate that positive relationship exist between changes in Japanese bank lending and movement in stock prices, indicating that the reaction of bank lending in Japan to increase in stock prices is significantly positive. The finding is consistent and intuitive with the influence of stock prices on supply and demand of bank loans. In addition, the result shows that there is variation in the historical association between bank lending and stock prices. The association was weak till the middle of 1980s but subsequently it became significant. Furthermore, the variations in the stock prices in that period contributed significantly to the variations in Japanese bank lending.

Chen (2001) examine the variations of price of real estate and stock in Taiwan from the period 1973 – 1992 applying Granger Causality test. The findings show that equity price Granger-cause real estate price, and bank loans are more significant in predicting the movements in price of both assets than interest rates. This is an evidence that the fluctuations in asset price in Taiwan is in line with the theory that lay emphasis on the significance of position of collateral and value balance sheet of firms that are credit constrained.

Ibrahim (2006) examines bank loan and stock prices dynamics in Malaysia. The study applies vector autoregressive model in evaluating the dynamic relations between stock prices and bank loan. The study also investigates may be bank loans assist in transferring financial surprises to the real sector. In addition, the causative correlation between bank lending and stock price has a vital part in offering strong understanding of banking vulnerability and the stock prices instrument in the actual market. The findings show proof that bank loan respond positively to stock price increase, however bank loans does not influence stock prices. In the same way, bank loans appear to accommodate real output expansion, but does not influence real economic activity. The findings conclude that bank loans do not significantly transmit the shocks of stock market to the real sector.

Karim et al. (2012) also examine the bank loan and stock price interaction in Malaysia. Applying Granger non-causality tests with multivariate and bivariate frameworks on quarterly and monthly data from the period 1999 – 2009. In contrast to prior studies, the findings show robust evidence of no causality between bank loan and stock price in all samples and models. The finding indicates that bank loans and stock prices are

independent. Using bank loan information does not increase the stock price predictability, which led to the conclusion that the stock market of Malaysia is efficient.

Almutair (2015) examines the dynamics of bank loans and stock prices relationship in Saudi Arabia. Applying quarterly data from the period 1998 - 2013. Granger Causality, Cointegration test, and an error correction model are the estimation method used for the study. The study finds a long-run association between stock prices and credit card loans. A positive association between stock price and bank loans, consistent with the theory that increase in stock price will increase the demand and supply for bank loans. The positive association between stock price and bank loans was found for all kinds of bank excluding the credit card loans. The plausible reason for negative association between credit card loans and stock price could be because credit card loans is affected primarily by the decision on consumption that is determined by wealth effect. The findings show that bank loan respond positively to the increase in Saudi Arabia stock price, which support the efficiency hypothesis of the Saudi Arabia stock market. It concludes that bank loans do not significantly transmit stock market shocks to the real sector.

The summary of the studies on the relations between bank loans and stock performance is depicted below in table 2.1.

Table 2.1: bank loans and stock market performance

No	Author	Type of Data	Variables	Empirical	Comments
1	Kim & Moreno (1994)	Time series monthly data January 1970 – May 1993	Stock price and bank loans	vector autoregressive models	There is positive relationship between changes in Japanese bank lending and movement in stock prices. The variations in the stock prices contributed significantly to the variations in Japanese bank lending.
2	Chen (2001)	Time series Quarterly data 1973:Q3 - 1992:Q1	Stock price, real estate price, bank loans, interest rates	vector autoregressive models	Bank loans are more significant in predicting the movements in price of both assets than interest rates.
3	Ibrahim (2006)	Quarterly data 1978.Q1-1998.Q2	stock prices and bank loan	Time-series techniques of cointegration, vector autoregression (VAR), Impulse Response Functions.	Bank loans respond positively to the increase in stock prices, however bank loans does not influence stock prices. Bank loans does not significantly transmit the shocks of stock market to the real sector.
4	Karim et al. (2012)	Monthly and Quarterly data 1999 – 2009	stock prices and bank loan	Granger non-causality tests in both	No causality between bank loans and stock

				multivariate and bivariate frameworks	prices in all samples and models. Bank loans and stock prices are independent. Using bank loan information does not increase the stock price predictability. The stock market of Malaysia is efficient.
5	Almutair (2015)	Quarterly data from the period 1998 - 2013	stock prices and bank loan	Cointegration test, an error correction model estimation, and VAR Granger Causality	The findings show that total bank loans respond positively to the increase in Saudi Arabia stock prices, which support the efficiency hypothesis of the Saudi Arabia stock market. Bank loans does not significantly transmit stock market shocks to the real sector.

2.5 Bank Size and Bank Stock Performance

The importance of size to stock returns had been well documented by financial literature. The study of Banz (1981) was the early study that give evidence of size effect. Perhaps the study of Fama and French (1992) are the most cited in this area. They found that size can explain the cross-sectional stock returns. Their study was from the period 1963 – 1989. Their research kindled interest in this area as well as the search for probable clarifications.

The study of Akella and Chen (1990) show that further complexities is introduced by the size of the bank. It is commonly stressed that large banks are expected to hedge financial risks because of economies of scale. Thus, it shows that large banks are probably less sensitive to financial markets movement. Though, size is regarded as a relative characteristic, while they may be large in a particular market, they may look small internationally. Nonetheless, these arguments indicate that the stock prices behavior may be different within banking sector, between small and large institutions even when facing the same economic conditions.

Holmstrom and Tirole (1997) examine the significance of information asymmetry as well as the consequential moral hazard difficulty between real sector firms and investors. The findings show that firm size plays an important part in the financial constraint severity, and in the response of the firms' equity and value to adverse aggregate shocks.

The study of Gandhi and Lustig (2010) indicate that the factors of Fama-French does not distance the bank stock returns arranged in portfolios by the firms' size with the smallest banks having positive alphas than the large banks. This is regarded as an evidence to support the "Too-Big-To-Fail" hypothesis, as large banks does not adopt all the

shortcoming risks they are assumed to be overpriced compare to the small banks. Thus, the financial firms' size factor is thought to be not spanned or traded by the Fama-French risk factors and is built through the main risk-adjusted returns component analysis.

Cohen et al. (2002) apply firm-level data applying the return de-composition technique which resulted into two vital findings. The first finding is that while news on expected return lean towards driving stock indices, firm-level stock returns variability is typically related with cash-flow news shock. Second finding indicate that the firm-level returns dependency tends to differ by firm size, with large firms being comparatively more sensitive to firm-specific cash-flow news than the small firms.

Gertler and Kiyotaki (2010) present information frictions between savers and the financial sector and applied it on a fully identified macroeconomic environment. The response of small banks to the shocks is different from the large firms because of financial frictions severity they are confronting. The net worth of the banks is inadequate to guarantee compatibility of incentive, and may lead to inaccurate investment decisions.

There are dearth of research on the influence of bank size on stock performance because most of the studies on bank size focus on its relationship with profitability. Thus, this study is considering the impact of size of banks on their stock performance. However, summary of the research on the association between bank size and stock performance are shown below in table 2.2.

Table 2.2: bank size and stock market performance

No	Author	Type of Data	Variables	Empirical	Comments
1	Fama and French (1992)	Time series/accounting data 1963 - 1989	Size, book-to-market-equity, leverage, earnings price ratio	Cross-sectional regression approach of Fama and Macberth (1973)	Size can explain the cross-sectional stock returns.
2	Akella and Chen (1990)	Time series	Interest rates, bank stock returns	vector autoregression approach	large banks are probably less sensitive to financial markets movement.
3	Gandhi and Lustig (2010)	Time series 1950 - 2008	Bank stock returns, market capitilization	events model with time-varying probabilities of a disaster	the disaster risk discount for large banks represents a large hidden subsidy to large banks and a tax on small banks

26

2.6 Bank Capitalization and Bank Stock Performance

Berger and Bouwman (2009) examine the association between bank capitals and various parts of banks performance in tranquil and crises time for banks in United States. The crises comprise of both stock market crashes and banking crises. They also compare excessive portfolio returns of a well-capitalized bank and an ill capitalized bank in the collapse of the early 1990s as well as in the latest subprime crisis. The findings show that well capitalized banks perform well significantly in the early 1990s, however they did not perform well in the recent crisis.

Berger and Bouwman (2013) also examine the effect of capital on bank performance in the period of financial crises. Their aim is to evaluate the effect of capital on bank performance in terms of market share and survival, as well as how the effect differs across normal time, banking crisis, and market crisis that happened in the United State more than the past quarter of century. Their results show that capitals assist small banks in increasing their probability of survival and market shares at all the periods (i.e. normal times, banking crises, and market crises). Their findings also show that capital increases performance of large and medium banks mainly in the period of banking crises.

The study of Meh and Moran (2010) indicate that the capital of banks co-moves with the whole economy's capability to absorb negative shocks from the stock price. Rationally, banks with low levels of capital need to cut down their lending in the period of negative growth. Though, in an economy where banks have a higher capitalization level, there are lower reductions in economic growth and lending.

The study of Carvalho et al. (2013) found that there is relationship between bank capital and firm performance. The result can be traced to the general financial stability of the

economy and information asymmetry level between lender and borrower. Furthermore, they found a relationship between banks unexpected shocks and a decline in their borrowing firm's market value.

The study of Demirgüç-Kunt and Huizinga (2010) showed that variations in initial capital do not constantly influence bank stock return before the crises. The significance of capital becomes obvious during the crisis period, and indicate that stock return of large banks has more sensitivity to leverage than to risk-adjusted capital during the crisis. The probable reason for this could be the view of market participants on the risk-adjusted under Basel rules that it is based on manipulation or does not reflect real risk in the perspective of large banks. Their result likewise show that positive relationship with the following stock returns is robust for highly quality capital.

The summary of the research on the association between bank capitalization and stock performance is depicted below in table 2.3.

Table 2.3: bank capitalization and stock market performance

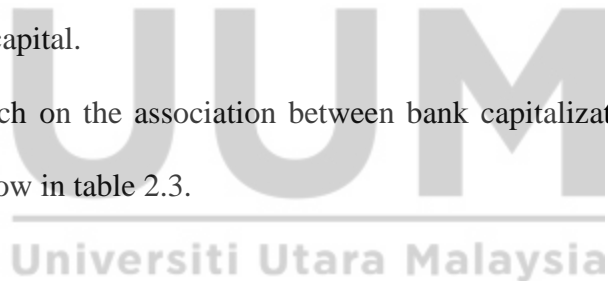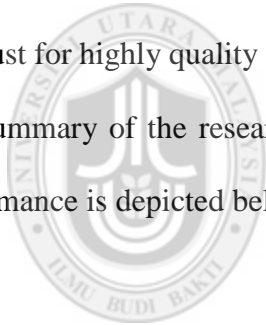| No	Author	Type of Data	Variables	Empirical	Comments
1	Berger and Bouwman (2009)	Time series 1987-2007	Market share, capital ratio, profitability, survival	Logit regression	Well capitalized banks perform well significantly in the early 1990s, however they did not perform well in the recent crisis.
2	Berger and Bouwman (2013)	Time series 1984:Q1 and 2010:Q4.	Market share, capital ratio, profitability, survival, size, equity returns	Logit regression	Capital assists small banks in increasing their market share and probability of survival at all the periods (i.e. normal times, banking crises, and market crises). Their findings also show that capital improves the performance of large and medium banks mainly during banking crises.
3	Demirgüç-Kunt and Huizinga (2010)	Cross sectional 1995-2007	Fee income, non-deposit funding, ROE, Z-score, GDP	Ordinary least Square regression	Variations in initial capital (whether risk-adjusted or not) do not consistently influence bank stock return before the crisis. The positive relationship with the subsequent stock returns is robust for higher quality capital.

2.7 Net Interest Margin and Bank Stock Performance

In spite of the important regulatory attention paid towards the interest rate risk that is challenging banks (Basel Committee on Banking Supervision, 2004), studies on an important earnings factor that could be very sensitive towards interest shocks, known as net interest margins has so far inadequate. Since the late 1980s, with exceptions to few studies, there have been few studies on the impacts of interest rate risk on bank stock performance. In addition, net interest margins models have characteristically achieved optimal margin for banks, based on uncertainty, competitive market structure, and management's level of risk-aversion. The most important bank behavior assumption in the models is that net-interest-margin is maximized. The determinant of net-interest-margins was hypothesized by Ho and Saunders (1981) based on the fact that banks serve as risk-averse dealers whose major source of risks was through variability of interest rate and manage it by varying the margins which depend on market structure.

The study of Elyasiani and Mansur (1998) examine the bank stock returns distribution sensitivity to the variations in the interest rate level and volatility using GARCH-M model that rejects the preventive assumption of independence, constant conditional variance, and linearity in bank stock returns modeling. Using data from the period 1979 to 1982 the effects of GARCH, ARCH and volatility feedback are significant. Interest rate level as well as its volatility directly influence bank stock returns. Interest rates volatility also indirectly influence the premia. The persistence level in shocks is significant for the portfolio of the three bank, their sensitivity, and the main regime of monetary policy.

Stiglitz and Weiss (1981) found that bank stock lose value under competition when discount rates is increased by the US Federal Reserve. This is has a result of tacky interest rates and rising of risks in a market that is competitive like the banking industry US. This indicates that official fluctuations in interest rate that lead to high interest rates attracts riskier borrowers, thus, existing clients may change to banks that does not upsurge their interest rates. As a result, banks have a difficult capability to influence net interest margins variabilities because of competition. This proposes that as a concern of operating influences of interest rates variabilities, and thus their net interest margins, banks face income changes thereby influenced stock returns.

Kuttner (2001) evaluates the influence of shock rate changes and revealed that they have a significant influence on bank stock returns. Applying interest rate futures as a measure for expectations, it indicated that when there is no shock, interest rates changes had limited influences, to the level that information taken was the same as those already have in other economic data or indicators. It also indicated that the market does not fully depend on the discount rate as a determinant of future prospects, but also rely on other economic indicators.

Madura and Schnusenberg (2000) examine the relations between the US Federal Reserve discount rate and the bank stock returns and found a negative relationship. Applying an inclusive methodology, the study indicated that bank stock returns reacts asymmetry to target rate changes. More specially, target rate increase suggested an inconsistent reaction to decreases. Furthermore, Madura and Schnusenberg (2000) revealed that the effect of Fed rate change differs significantly depending on the concerned banks' size. A more

significant result was that rate change influence on bank stock returns were negatively associated to the capital ratios of the studied banks.

The summary of the studies on the relationship between net interest margin and bank stock returns is depicted below in table 2.

Table 2.4: Net Interest Margin and stock market performance

No	Author	Type of Data	Variables	Empirical	Comments
1	Angbazo (1997)	Call Report 1989-1993	Credit risk, net interest margin, interest rate risk	Cross-sectional regression	finds that off-balance-sheet items do affect net interest margins for all bank types except regional banks.
2	Elyasiani and Mansur (1998)	1979 to 1982	Interest rates, bank stock returns	GARCH-M	Interest rate and its volatility directly influence distribution of bank stock returns.
3	Hanweck & Ryu (2005)	1986-2003 Quarterly data	Interest rates, ROA, credit risks	Fixed and random effects	Banks in most bank groups are sensitive in varying degrees to credit, interest-rate, and term-structure shocks. Large and more diversified banks seem to be less sensitive to interest-rate and term-structure shocks, but more sensitive to credit shocks.

CHAPTER THREE

DATA AND EMPIRICAL METHOD

3.0 Introduction

Based on the aim of this study which is to empirically find the association between bank lending and bank stock performance among ASEAN, this chapter focus on the methodology applied in carrying out this study. Actually, there are ten countries under ASEAN, which include Indonesia, Malaysia, Singapore, Philippines, Thailand, Vietnam, Cambodia, Brunei, Laos, and Myanmar. However, data are not available for all the ten countries because only six out of these countries operate at least a stock exchange market. The countries that operate stock exchange markets include Malaysia, Indonesia, Singapore, Thailand, Philippines, and Vietnam; while countries that do not operate a stock exchange market include Brunei, Cambodia, Myanmar, and Laos. Therefore, data will be collected from these countries to represent all the ASEAN.

3.1 Data Description

The approach applied in finding the empirical evidence of impact of bank lending on bank stock performance in ASEAN is panel data approach. A yearly bank data from the period 2000 to 2014 was retrieved from the six countries representing ASEAN in this study.

Table 3.1 Sample periods used for each country

Country	Sample periods
Indonesia	2000 – 2014
Malaysia	2000 – 2014
Philippines	2000 – 2014
Singapore	2000 – 2014
Thailand	2000 – 2014
Vietnam	2008 – 2014

3.2 Sources of Data

This study collected the required bank data from the DataStream in the library of Universiti Utara Malaysia. These consist of bank data of 68 banks operating in the stock exchange markets of the selected six countries representing ASEAN. These banks are shown in appendix 1.

Table 3.2 Number of banks

Country	Number of banks
Indonesia	25
Malaysia	10
Philippines	13
Singapore	3
Thailand	10
Vietnam	7
Total	**68**

3.3 Definition of the Variables

3.3.1   Dependent Variable

Bank stock performance: stock performance of bank is the dependent variable in this study and it is measured through bank stock returns. Stock market return can be defined as the return that an investor generated from investing in the stock market. The return can be profit through trading or dividends given by firms to their shareholders periodically (www.economywatch.com). Despite the empirical evidence that numerous factors influence bank stock, the exact amount of these factors have not been established (Foong et al., 2012). According to the assumption of Markowitz (1952), aim of an investor in stock is to maximize his portfolio expected returns, which is subject to bearable risk level; or minimize risks, which is also subject to bearable expected returns. Therefore, based on the supposition of a particular time, along with the supposition of the investor's approach

34

concerning risks, permits risk been measured through the portfolio's returns standard deviation or variance. The more securities included into a portfolio, the more the expected returns and changes in standard deviation, which is centered on the co-variance of the new securities and other securities in the portfolio.

Mossin (1966), Lintner (1965) and Sharpe (1964), build on Markowitz framework individually and then developed the Capital Asset Pricing Model (CAPM). Assumption of CAPM is that Markowitz logic is only used by investors to form portfolios, and there exist an asset (a risk-free asset) which include a definite return. Thus, with the existence of a risk-free asset, efficient frontier of Markowitz framework is not the best option for an investor. However, despite the simple model and sound reasoning of the CAPM, it has some assumptions underlining the model that are unrealistic. Some of these assumptions were relaxed through proposing and extending the basic CAPM (Black, 1972). Ross (1976) did not extend the existing theory but developed a complete different model which is known as the Arbitrage Pricing Theory (APT). In contrast to the CAPM which is based on the equilibrium of financial market, the APT idea is that efficient financial market should not give room arbitrage. This theory is much less restraining compare to those needed to develop the CAPM.

The CAPM and APT are single-period, or static models; intrinsically, disregarding multi-period way of participating in the capital market. In this regard, Merton (1973) developed intertemporal capital asset pricing model (ICAPM) in take care of the multi-period part of equilibrium of financial market equilibrium. The ICAPM model identifies that the prospect of investment set under Markowitz and CAPM models could change over time, and investors may likely hedge themselves against negative changes in the group of attainable

investments. When a specific security lean towards having high returns, if the investment opportunity set is negatively affected, investors may likely hold the security in order to hedge it. This high demand would lead to high equilibrium price for the stock (all things been equal). One of the key perceptions of the ICAPM is the requisite to reveal this hedging demand in the asset pricing equation.

Despite the impractical assumptions affecting CAPM single-period, it still the most generally applied asset pricing model within few years of its development. Due to its simplicity and along with the empirical results that proof most of its expectations (Fama and MacBeth, 1973), it has become the most generally imparted asset pricing model in business. Some empirical studies examined APT, but most of the financial world apply the CAPM.

3.3.2 Independent Variables

Bank Loans: loan involves redistributing financial assets, which occur between lender and borrower. The borrower originally obtains a sum of money from the bank, which he or she will pay back in regular installments to the bank. Loan is usually given at a cost, regarded as interest on loan. The bank usually subjects the debtor to some certain limitations identified as covenants of loans. Provision of loans is one of the main responsibilities of financial institutions. It is usually the source of banks income. Bank loans and bank credit are also some of the ways to increase money supply to the economy.

According to Handbook (1998) the main business activity for most banks is lending. The predominant source of revenue and the largest asset to banks is loan portfolio. It is the highest bases of risk to banks healthiness and safety. As loan is regarded as illiquid asset,

the increase in the level of loan increases illiquid assets in the bank's asset portfolio. According to Pilbeam (2005), the level of banks liquidity is highly influenced by demand for loan, which is the foundation of loan growth. When loan demand is low, the banks need to hold more liquid asset, however when there is high loan demand banks need to reduce their level of liquid assets because long term loans are usually more profitable. Thus, an increase in loans and advances negatively influence banks liquidity.

Bank Size: the total asset is applied as a proxy for bank size in most research on determinant of bank profitability. Bank size is generally used to measure possible economies or diseconomies of scale that occur in the banking institutions. In addition, bank size is related with bank diversification which may favorably influence portfolio of product and risk. The cost of gathering and processing information will be reduced by economies of scale, therefore, bank size will have a positive relationship with bank profitability (Boyd & Runkle., 1993; Smirlock, 1985; Akhavein et al., 1997). According to Short (1979) size is narrowly associated with banks capital adequacy as relatively large banks only need to acquire less expensive capital to achieve more profitability. Goddard et al. (2004), Bikker and Haaf (2002), Molyneux et al. (1992), Bourke (1989), Short (1979), and Haslem (1968) have related bank size to capital ratios, claiming that it has positive relationship with bank size. These findings indicate that as bank size increases, the profitability of banks increases. This assumption is specifically found in the case of small and medium sized banks.

Alternatively, increase in bank diversification may reduce credit portfolio risk thereby decreasing stock returns. Extremely large banks may show negative association between

37

bank size and bank profitability due to agency cost and bureaucracy. Berger et al. (1987) stressed that less cost saving could be attained through increase in bank size, which shows that ultimately extremely large banks can face scale inefficiencies.

Bank Capitalization: The proxy for bank capitalization is the equity to total asset ratio. Bank capitalization shows the amount of total asset financed using equity capital. Capital adequacy therefore describes the adequacy of level of equity that can absorb banks shocks. The expectation is that the increase in equity to asset ratio will reduce the need for external funding and lead to increase in bank profitability. In addition, well-capitalized banks were challenged with a lower bankruptcy cost which decreases their funding cost (Kosmidou & Zopounidis, 2008).

Moreover, banks with high capital-to-asset-ratio are regarded comparatively safer and lean towards having a better cushion margin, remain profitable even difficult periods. Bank equity capital offers a cushion against unanticipated losses and therefore helps banks in terms of survival, thus overwhelming the insolvency risk. Hence, banks equity capital performs as the defense or last resort against failure since any incurred losses by banks are possibly written- off against capital. In relate to inevitable bankruptcy, Le Bras and Andrews (2004) stressed that investors, creditors and depositors are protected by bank equity capital against anticipated losses that would be incurred by them. Therefore, level of banks' equity capital as well as their capital adequacy are regarded as the most essential factors in the bank solvency analysis. According to Le Bras and Andrews (2004) bigger banks (in relate to absolute equity size) are expected to be important to their local economies as the possibility of getting external funding occurs strongly, when needed, and

therefore decreases their default risk. Numerous research has indicated that high ratios of capital strength lead to better bank ratings (Laruccia & Revoltella, 2000; Poon & Firth, 2005; Van-Roy, 2006; Pasiouras et al., 2006; 2007; Poon et al., 2009).

Net Interest Margin (NIM): it can be defined as the measure of the difference between interest income from bank lending and interest paid through borrowings. It is regarded as similar to non-financial firms' gross margin. This study expresses net interest margin as net interest revenue over total assets.

The study of Hanweck and Ryu (2005) indicate that NIM serve as one of the main components of after-tax earnings and net cash flows of banks in spite of the increasing significance of fee-based-income-to-total-income ratio for many banks. Except for credit card specialists and extremely large banks, non-interest income is still a comparatively small and commonly a steady bank earnings component. Therefore, notwithstanding diversification of earnings, net interest income changes still a main determinant of profitability changes for many banks. Study shows that about 60% of banking industry managed revenue is from NIM and approximately 50% for more diversified large-capitalized banks (Mason et al., 2006). Thus, bank NIM is a vital bank profitability determinant. A sufficient interest margin should generate adequate income that will increase the capital base when exposure on risk increases (Angbazo, 1997).

Table 3.3: Measurement of dependent and independent variables

Variable	Measure	Notation	Previous Findings
Dependent variable			
Stock Return	The return on bank stock	R	Beccalli *et al*. (2006), Lidaki and Gaganis (2010), Ioannidis & Kontonikas. (2008)
Independent variable			
Bank Loans	Total Loans over Total Assets	BL	Lummer and McConnell (1989), Slovin et al. (1992), Boscaljon and Ho (2005)
Bank size	Log of Total Assets	SIZE	Akhavein *et al.* (1997), Smirlock (1985), Haslem (1968), Short (1979), Bourke (1989), Molyneux & Thorton (1992), Bikker & Haaf (2002), Goddard *et al.,* (2004), Vong & Chan (2009), and Rasiah (2010)
Bank Capitalization	Log of (Equity divided by Total Assets)	BC	Hughes et al. (1999), Goddard et al. (2004), Abreu & Mendes (2001), Kosmidou et al.(2004), Naceur (2003)
Net Interest Margin	Net Interest Revenue over Total Assets	NIM	Madura and Zarruk (1995), Saunders and Schumacher (2000), Hasan and Sarkar (2002), Furletti (2003)

*Based on yearly data

3.4 Hypothesis Development

The hypotheses of this study are based on the theoretical framework of this study which is defined as follows:

3.4.1 Bank Loans

As the importance of bank loans to banks have been expatiated vividly earlier, empirical studies have shown evidence that there is a relationship between bank loans and bank stock performance. The study of Vong & Chan (2009) measured bank loans using ratio of bank-loan-to-total-assets, they found that bank loans decreases bank profitability. They stressed that the plausible reason for the negative relationship is because of the rigid competition in interbank placement of idle funds in foreign countries and in the credit market. Their finding was in consistent with some of the past studies (Vong, 2005; Bashir & Hassan, 2003; Staikouras & Wood, 2003). Staikouras and Wood (2003) actually traced the reason for the negative relationship to the fact that a high loan ratio influences profit negatively because banks that put more reliance on non-loan earning assets have more profit than those relying greatly on loans.

On the other, the study of Abreu and Mends (2001) indicate a positive relationship between bank loan ratio and profitability.

Based on these various findings, it shows there are mixed results on the relationship and the nature of relationship between bank loans and bank stock performance. Therefore, this study predicts a significant relationship between bank loans and bank stock performance. The hypothesis for this study for influence of bank loans on bank stock performance is:

Hypothesis 1

H1: There is a significant relationship between bank loans and bank stock performance.

H_o: $\beta_1 = 0$

H_1: $\beta_1 \neq 0$

3.4.2 Bank Size

The study of Humphrey and Pulley (1997) showed that in reaction to the deregulation of interest rate on U.S. banks, that abruptly increased banks costs and reduced their performance, large banks responded more efficiently through altering their input use and output prices. Contrariwise, smaller banks reacted with little main changes and instead depended on the better business environment to improve their profits. DeYoung and Hasan (1998) examined the banks' profit efficiency determinant by examining a set of financial structural, regulatory and economic variables on new established banks. Their findings show that size influences banks' performance positively. Unite and Sullivan (2003) also found that size and non-interest income and performance are positively related.

This has shown that most study on bank size and bank stock performance found a positive association between bank size and bank stock performance. Hence, this study predicts a significant association between bank size and bank stock performance. Hypothesis for this study for the effect of bank size on bank stock performance is:

Hypothesis 2

H2: There is a significant relationship between bank size and bank stock performance.

H$_o$: $\beta_2 = 0$

H$_1$: $\beta_2 \neq 0$

3.4.3 Bank Capitalization

Berger (1995) found that lower capital level place the banks on a risky situation and influence negatively on the banks stock performance. The study of Karkrah and Ameyaw (2010) found that there is a positive relationship between bank capitalization and bank performance. Their findings is in line with the results of Sufian & Chong (2008) that found a positive relationship between level of bank capitalization and bank stock performance. These abovementioned findings are also in line with the study of Pasiouras and Kosmidou (2007), Demirguc-Kunt and Huizinga (1999) and Berger (1995).

Due to this findings, this study predicts a significant relationship between bank capitalization and bank stock performance. The hypothesis for this study for the influence of bank capitalization on bank stock performance is:

Hypothesis 3

H3: There is a significant relationship between bank capitalization and bank stock performance.

H$_o$: $\beta_3 = 0$

H$_1$: $\beta_3 \neq 0$

43

3.4.4   Net Interest Margin

The study of Naceur (2003) found that high profitability and NIM are expected to be related with high level of cost and capital. Their examination of the association between the NIM and bank profitability, it showed that well-capitalized banks are highly efficient and this resulted into improved performance. The finding is also in line with the study of Abreu and Mendes (2001). According to Gelos (2006) the NIM of international banks are higher than that of the local banks in poor countries because of their high interest rates and large reserve demand which lead to improve in their performance.

Based on this argument, this study predicts a significant relationship between net interest margin and bank stock performance. The hypothesis for this study for the impact of net interest margin on bank stock performance is:

Hypothesis 4

H4: There is a significant relationship between net interest margin and bank stock performance.

H$_o$: $\beta_4 = 0$

H$_1$: $\beta_4 \neq 0$

Summarizing of the Hypotheses

1. *There is a significant relationship between bank loans and bank stock performance.*

2. *There is a significant relationship between bank size and bank stock performance.*

3. *There is a significant relationship between bank capitalization and bank stock performance.*

4. *There is a significant relationship between net interest margin and bank stock performance.*

3.5 Theoretical Framework

The proposed theoretical framework is as follow:
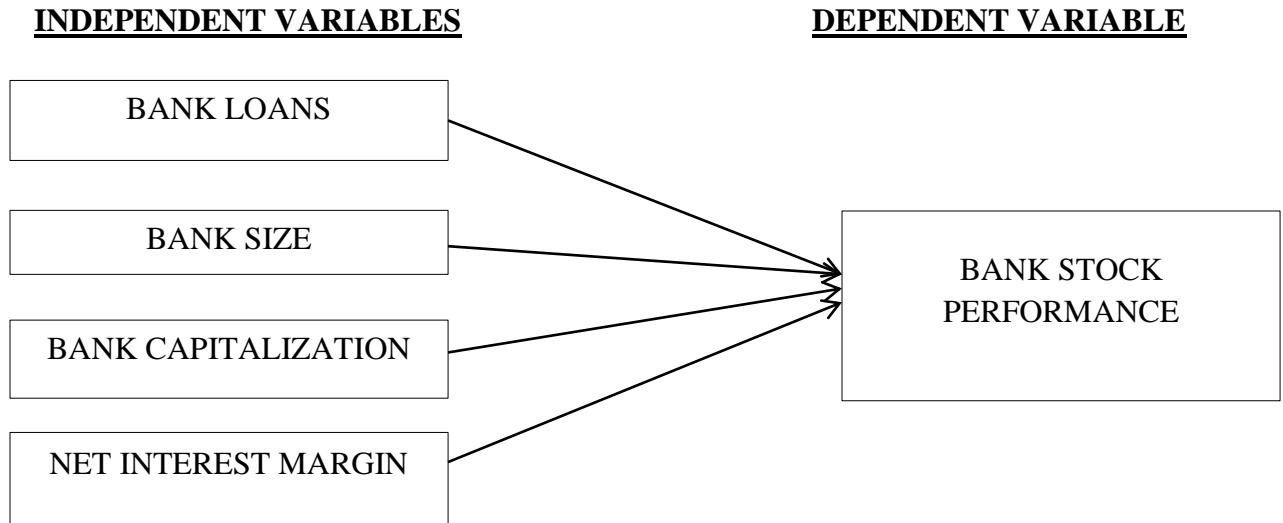
Figure 3.1: *Theoretical Framework*

3.6 Regression Model

A model was analyzed in order to test the proposed hypotheses. Below is the model estimated for the hypotheses:

$$Y_{it} = \beta_o + \beta_1 X_1$$

$$y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_{it}$$

$$R_{it} = \beta_o + \beta_1 BL_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 BC_{i,t} + \beta_4 NIM_{i,t} + \mu_{it} \qquad (1)$$

Where:

R_{it} = the return on the bank stock at time t

BL_t = the bank loans at time t

$SIZE_t$ = the bank size at time t

BC_t = the bank capitalization at time t

NIM_t = the net interest margin at time t

μ_{it} = the residual error of the regression

3.7 Empirical Method

The data analysis techniques applied to carry out this study is expatiated in this section. Thus, this study employed descriptive statistics, heteroscedasticity, auto-correlation analysis and regression analysis as data analysis techniques for this study.

According to Hsiao (1986) panel data method has some advantages which include (i) more precise inference of model parameters, (ii) better capability to capture the intricacy of human behavior compare to a time series and single cross-section data, and (iii) Simplicity of computation and statistical implication.

3.7.1 Panel Least Squares Regression

Panel Ordinary Least Square (OLS) estimation was applied as a method of analysis. OLS is a suitable method of regression estimation because it decreases problem of normality in models.

3.7.2 Other tests

This study applies other tests, which include unit root test and Co-integration test.

3.8 Summary of the Chapter

The variables applied, the measurement for the variables, and the theoretical framework of this study have been explained, described and depicted in this chapter. It also expatiate on the hypotheses, model specification and the empirical method to employ for the analysis of the data.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter focus on the analysis and findings of this study. The summary of the descriptive statistics is depicted in section 4.1. Meanwhile, the correlation matrix of the variables is shown and expatiated in section 4.2. Section 4.3 elucidates on the findings of regression estimation. Section 4.4 expresses the findings of the unit root tests, while section 4.5 deals with the panel co-integration test. Discussion on the empirical findings between the independent variables and the dependent variable is expounded in section 4.6, while section 4.7 deals with the summary of the chapter.

4.1 Descriptive Statistics

The first analysis and findings in this study is the descriptive statistics. The descriptive statistics below in Table 4.1 depicts the summary of the dependent and independent data collected for this study.

Table 4.1: Summary of the descriptive statistics

	N	Mean	Std. Dev.	Median	Minimum	Maximum	Kurtosis
R	1020	5.38610	0.65112	5.29501	4.42233	6.50587	2.0588
LOANS	1020	0.72472	0.05349	0.71762	0.62589	0.82108	2.2149
SIZE	1020	18.1040	0.54684	18.0818	17.1927	18.9534	1.8967
CAP	1020	-2.6045	0.13643	-2.6118	-2.9672	-2.4027	4.1277
NIM	1020	22.1427	4.90239	19.9800	15.2100	30.6600	1.8088

The descriptive statistics in table 4.1 above indicates that stock returns of banks in ASEAN is averagely 538.61% (5.38610) for the periods under review, which shows that high stock performance is generated by ASEAN banks during the period that may result into high returns to shareholders and high conversion of assets.

Based on the independent variables, the loans granted by ASEAN banks during this period is averagely 72.47% (0.72472); while the mean of the bank size is 181.04% (18.1040) indicating that most banks in ASEAN are large size which allows them to enjoy large scope and economies of scale. The average of bank capitalization is -260.45% (-2.6045) indicating a very low bank capital adequacy for the period. The mean of net interest margin is 2214.27% indicating that ASEAN banks have huge amount to cover for their total operating expenses, increase their loan provision, income tax and shareholders return.

4.2 Correlation

Table 4.2: Correlation Matrix

	R	LOAN	SIZE	CAP	NIM
R	1.0000				
LOAN	0.0571*	1.0000			
SIZE	-0.0573*	0.0905*	1.0000		
CAP	0.0227**	-0.0874*	-0.0981*	1.0000	
NIM	0.2938	0.0147**	-0.0321**	0.2967	1.0000

Note: **, * indicate significant at 5% and 10% respectively

Table 4.2 above showed the correlation that exist among the variables, which indicate the linear correlation level between the variables for this study. Some correlation showed a 5% significant level (returns and capitalization, NIM and loans, and NIM and size) while some indicate correlation at 10% significant level (loan and returns, size and returns, size and loan, and capitalization and size).

Table 4.3: Variance Inflation Factors (VIF) for Multicollinearity test

LOAN	1.017
SIZE	1.017
CAP	1.115
NIM	1.099

Table 4.3 showed the Multicollinearity test conducted through Variance Inflation Factors (VIF). Capitalization has the highest VIF of 1.115, which indicate that the sample has no multicollinearity problem since the highest is under 10 (Hair et al., 2006).

4.3 Regression Analysis

The panel data regression estimation on the impact of bank lending on stock performance of banks in ASEAN for the period 2000-2014 is shown below in table 4.4:

Table 4.4: Regression Analysis of the impact of bank lending on the stock performance of ASEAN banks

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.05009	0.199309	-65.47682	0.0000
LOAN	-0.325861	0.085490	-3.811681	0.0001*
SIZE	1.109177	0.011090	100.0121	0.0000*
CAP	0.624426	0.029368	21.26221	0.0000*
NIM	0.009851	0.001147	8.586292	0.0000*

R-squared	0.968331	Mean dependent var	5.386101
Adjusted R-squared	0.968207	S.D. dependent var	0.651126
S.E. of regression	0.116100	Akaike info criterion	-1.463835
Sum squared resid	13.68147	Schwarz criterion	-1.439680
Log likelihood	751.5557	Hannan-Quinn criter.	-1.454663
F-statistic	7758.935	Durbin-Watson stat	2.538079
Prob(F-statistic)	0.000000		

Note: * significant at 1% level

$$Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_{it}$$

$$R_{it} = \beta_o + \beta_1 LOAN_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CAP_{i,t} + \beta_4 NIM_{i,t} + \mu_{it}$$

$$R = -13.05 - 0.33LOAN + 1.109SIZE + 0.624CAP + 0.010NIM$$

Se (0.199)   (0.085)   (0.011)   (0.029)   (0.001)

t-stat (-65.477) (-3.812)   (100.01)   (21.262)   (8.586)

Prob. (0.0000) (0.0001)   (0.0000)   (0.0000)   (0.0000)

n = 1020

$R^2 = 0.9683$

Adj $R^2 = 0.9682$

Table 4.5 Panel OLS Regression for ASEAN Banks (per countries)

	Constant	LOAN	SIZE	CAP	NIM	R^2	Prob (F-Statistics
Malaysia	-11.7191	1.3565	0.9205	-0.2132	0.0016	0.6098	0.000
	0.000	0.078*	0.000***	0.306	0.7854		
Singapore	-6.38202	1.517047	0.629920	-0.242782	0.004597	0.5133	0.000
	0.008	0.019**	0.001***	0.741	0.600		
Thailand	-2.127375	3.204223	0.424638	1.329983	0.004707	0.4405	0.000
	0.224	0.003***	0.000***	0.000***	0.248		
Indonesia	2.552396	0.972561	0.109032	0.633925	0.007013	0.0448	0.008
	0.140	0.178	0.075*	0.078*	0.338		
Philippines	-5.866636	4.061066	0.683807	1.788411	0.030941	0.5654	0.000
	0.000	0.000***	0.000***	0.000***	0.000***		
Vietnam	10.14054	0.972771	-0.228615	0.316146	0.024511	0.2695	0.052
	0.004	0.042**	0.118	0.373	0.105		

Note: ***, **, * indicate significant at 1%, 5% and 10% respectively.

The regression analysis estimation using OLS for each countries is depicted in table 4.5. In regards to the table, bank loans has positive relationship with bank stock performance of all countries except in Indonesia where the relationship is not significant. It indicates a 1% significant level of relationship in Thailand and Philippines, 5% significant level in Singapore and Vietnam, and 10% significant level in Malaysia. Bank Size has positive significant relationship with bank stock performance in all the countries except in Vietnam. It shows a 1% significant level of relationship in Malaysia, Singapore, Thailand, Philippines, but a 10% significant level of relationship in Indonesia. Bank capitalization has a positive significant relationship with bank stock performance in Thailand (at 1% level), Indonesia (at 10% level), and Philippines (at 10% level), but insignificant relationship in Malaysia, Singapore, and Vietnam. Net interest Margin only shows significant relationship between bank stock performance in Philippines at 1% significant level, and shows insignificant relationship in other countries.

4.4 Unit Root Tests

Table 4.6: Unit root tests

Variables	Levin, Lin,Chu		Im,Pesaran , Shn	
	Level	First Difference	Level	First Difference
Loan	-10.6071	-28.7705	-4.28657	-19.2285
	0.0000**	0.0000**	0.0000**	0.0000**
Size	1.81331	-31.5783	9.57269	-16.4313
	0.9651	0.0000**	1.0000	0.0000**
Cap	-6.47802	-105.304	-2.14710	-34.6757
	0.0000**	0.0000**	0.0159*	0.0000**
NIM	-21.8069	-62.7279	-9.46153	-23.9724
	0.0000**	0.0000**	0.0000**	0.000**

Note: **, * indicate significant at 1% and 5% respectively.

Based on the Unit root test shown above in table 4.6, the Level estimation under Levin, Lin,Chu indicate that all the variables are significant at 1% significant level except for Size which is insignificant, meanwhile First Difference under Levin, Lin, Chu showed that all the variables are significant at 1% significant level. On the other hand, the Level estimation under Im,Pesaran,Shn indicate that all the variables are significant except for Size. Loan and NIM are significant at 1% significant level, while Capitalization is significant at 5% level. The First Difference under Im, Pesaran Shn showed that all the variables are significant at 1% significant level.

4.5 Panel Co-Integration Test

The panel co-integration test results between stock performance and each of the independent variables (loan, size, capitalization, NIM) is depicted in Table 4.7 below. The co-integration test for the relationship between stock performance and bank loan showed that the null hypothesis of no co-integration can be accepted since the relationship is insignificant. This implies that there is no long-term relationship between bank loans and stock performance. Co-integration test for the relationship between bank size and stock performance, and the relationship between NIM and stock performance showed that the null hypothesis of no co-integration can be rejected at 1% significant level, implying that there is long-term relationship between bank size and stock performance, and NIM and stock performance. Similarly, the co-integration test for the relationship between bank capitalization and stock performance showed that the null hypothesis of no co-integration can be rejected at 5% significant level, indicating that there is long-term relationship between bank capitalization and stock performance. In addition, the Augmented Dickey-Fuller Test Equation showed that all the independent variables (Loan, Size, Capitalization, NIM) and the dependent variable (stock performance) are significantly related at 1% significant level.

Table 4.7: Kao Residual Co-integration Test

	t-Statistic	Prob.	
Loan	-0.892597	0.1860	
Size	-25.75135	0.0000**	
Capitalization	1.891120	0.0293*	
NIM	-16.15534	0.0000**	

Augmented Dickey-Fuller Test Equation

	Coefficient	Std. Error	t-Statistic	Prob.
Loan	-0.278770	0.032530	-8.569617	0.0000**
Size	-1.459151	0.047660	-30.61571	0.0000**
Capitalization	-0.083477	0.014550	-5.737131	0.0000**
NIM	-0.726144	0.036202	-20.05808	0.0000**

Note: **, * indicate significant at 1% and 5% respectively

55
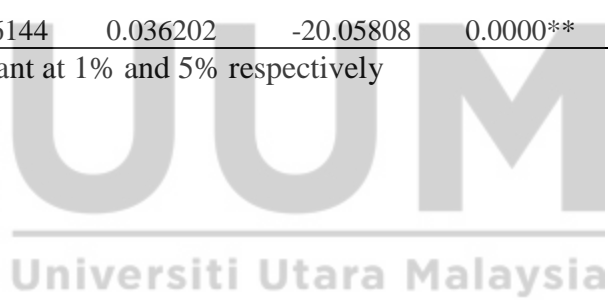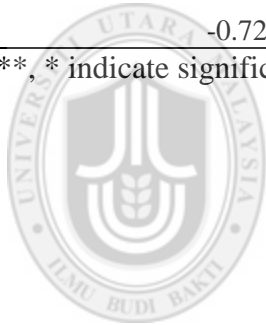
4.6 Discussion of Findings

4.6.1   Bank loans and bank stock performance

Bank loans has a negative significant association with the stock performance of banks in ASEAN. This results indicate that bank loans negatively influences stock performance of ASEAN banks during the periods under review. The plausible reason for this result is that the fluctuations in bank lending negatively influence stock price movements, which then reduces stock returns for the period (Kim & Moreno, 1994). This shows that the impact of stock prices on ASEAN bank lending does not reflects the influence on bank loan supply. In addition, another possible reason for the negative significant relationship between bank loans and stock performance could be traced to the rigid competition in the credit market as well as in the interbank placement of indolent funds in foreign nations (Vong & Chan (2009); Vong, 2005).

On the other hand, this negative relationship between loan and stock performance could be better for ASEAN banks because a higher bank loan ratio definitely influences profitability negatively since banks that rely more on non-loan assets perform better compare to those that depend hugely on loans (Bashir & Hassan, 2003; Staikouras & Wood, 2003). This finding is consistent with the results of Bashir and Hassan (2003), Vong (2005), Staikouras and Wood (2003), and Vong & Chan (2009). Therefore, the hypothesis that assumed a negative relationship between bank loans and bank stock performance is accepted.

4.6.2 Bank size and Bank Stock Performance

The panel regression analysis results showed a positive significant relationship between bank size and bank stock performance, indicating that the size of banks positively influences their stock performance. The plausible reason for this results could be based on the fact that all the selected banks for this study are large banks listed on the stock exchange of their various countries in ASEAN. Large banks relish scale and scope economies through maximizing their outputs and minimizing the "per unit cost by reducing the cost of gathering and processing information through involving in joint marketing and production (Boyd & Runkle, 1993). This large banks are usually not influenced by fluctuations in business environment and can respond efficiently to safeguard themselves from surprises that may affect their stock performance. This result is in consistent with the study of Smirlock (1985), Akhavein et al. (1997), Humphrey and Pulley (1997), and Unite and Sullivan (2003). The hypothesis that proposed a positive association between bank size and bank stock performance is thereby accepted.

4.6.3 Bank Capitalization and bank stock performance

The regression analysis results indicate a positive relationship between bank capitalization and bank stock performance, implying that the capital of banks in ASEAN influences their stock performance. This can be traced to the fact that ASEAN banks have higher capital to asset ratio which make them to have a better margin of cushion and continuous profitability even during difficult periods. Their higher equity capital provides them a cushion against unexpected losses and therefore helps them to survive and avoid risk of insolvency. Banks equity capital serves as the last resort or defense against failure since any bank losses are

57

possibly written off against capital. In an unavoidable bankruptcy scenario, bank equity

capital protects creditors, investors and depositors against anticipated losses that ought to

be incurred by them (Le Bras & Andrews, 2003).

In addition, this finding is consistent with the results of Sufian & Chong (2008), and

Demirgüç-Kunt and Huizings (2010). Therefore, the hypothesis that assumed a positive

relationship between bank capitalization and bank stock performance is thereby accepted.

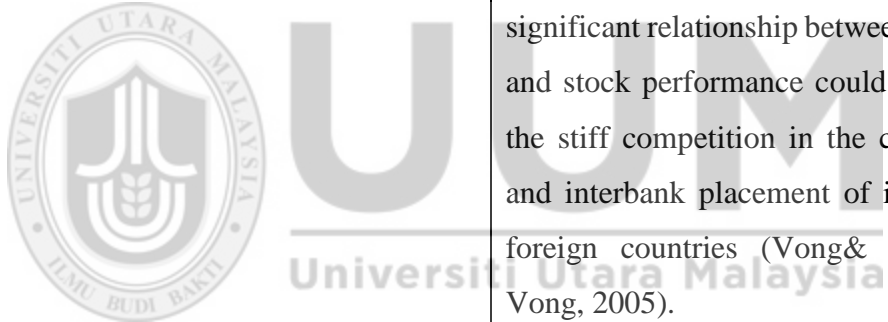### 4.6.4   Net Interest Margin and Bank stock performance

Net interest margin (NIM) has a positive significant relationship with bank stock

performance in the panel regression analysis, indicating that interest margin has a positive

influence on bank stock performance in ASEAN. The plausible reason can be traced to the

fact that ASEAN banks are well capitalized and more effective and which lead to increase

in their stock performance since high NIM and stock performance are expected to be related

with high quantity of cost and capital. NIM is one of the main elements of after-tax earnings

and net cash flows of banks despite the increase significance of fee-based income as a

percentage of total income for several banks. Non-interest income still remains a small and

more stable component of bank earnings except for credit card specialists and large

institutions. Therefore, despite diversification, a main determinant of changes in stock

performance for most banks is change in net interest margin because it accounts for about

60% of managed revenue of banking industry and approximately 50% for the most

diversified large capital banks (Mason et al., 2006). The finding is in line with the study of

Kuttner (2001), Abreu and Mendes (2001), and Naceur (2003). The hypothesis that

supposed a positive relationship between Net interest margin and bank stock performance is thereby accepted.

Table 4.8 depicts the summary of the hypotheses testing findings of the relationship between bank loans, bank size, bank capitalization, net interest margin with bank stock performance.

Table 4.8: Summary of Hypotheses

HYPOTHESES	BANK STOCK PERFORMANCE
H1: There is a significant relationship between bank loans and bank stock performance.	Hypothesis is supported. The impact of stock prices on ASEAN bank lending does not reflects the influence on bank loan supply. The negative significant relationship between bank loans and stock performance could be traced to the stiff competition in the credit market and interbank placement of idle funds in foreign countries (Vong& Chan 2009; Vong, 2005).
H2: There is a significant relationship between bank size and bank stock performance.	Hypothesis is supported. All the banks selected for this study are large banks listed on the stock exchange of their various countries in ASEAN. This large banks are usually not affected by fluctuations in business environment and can respond efficiently to safeguard themselves from shocks that may affect their stock performance.
H3: There is a significant relationship between bank capitalization and bank stock performance.	Hypothesis is supported. ASEAN banks have higher capital to asset ratio which make them to have a better

	margin of cushion and continuous profitability even during difficult periods. Their higher equity capital provides them a cushion against unexpected losses and therefore helps them to survive and avoid risk of insolvency.
H4: There is a significant relationship between net interest margin and bank stock performance.	Hypothesis is supported. ASEAN banks are well capitalized and more effective and which lead to increase in their stock performance since high NIM and stock performance are expected to be related with high quantity of cost and capital.

4.7 Summary of the Chapter

This chapter explained the findings of this study. It expatiates on the results of the descriptive statistics, correlation matrix, panel data regression estimation, unit root tests, and the co-integration tests. In addition, the outcomes of the regression estimation, was vividly construed through discussion of the findings in this chapter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

The general conclusion on the impact of bank lending and bank stock performance is discussed in this chapter. The discussion starts with the study overview and followed by the contribution of the research to numerous interested parties. Finally, limitations are expounded and suggestion for future studies is considered.

5.1 Overview of the Study

This study examined the impact of bank lending on bank stock performance in ASEAN using a panel data method. The data for this study is retrieved from the DataStream. The sample consists of 68 listed banks from six countries (Indonesia, Malaysia, Singapore, Philippines, Thailand, and Vietnam) in ASEAN for the period 2000-2014. The study found that bank loans has a negative significant association with the stock performance of banks in ASEAN, implying that bank loans negatively influences stock performance of ASEAN banks. The plausible reason for this result is that the fluctuations in bank lending negatively influence stock price movements, which then reduces stock returns. In addition, it also shows that the impact of stock prices on ASEAN bank lending does not reflects the influence on bank loan supply. Bank size shows a positive significant relationship with bank stock performance, indicating that the size of banks positively influences their stock performance. The plausible reason for this result is that all the banks selected for this study are large banks listed on the stock exchange of their various countries in ASEAN. Large banks relish scale and scope economies through maximizing their outputs and minimizing

the "per unit cost by reducing the cost of gathering and processing information through involving in joint marketing and production. Bank capitalization and bank stock performance are positively related, implying that the capital of banks in ASEAN influences their stock performance. The plausible reason is that ASEAN banks have higher capital to asset ratio which make them to have a better margin of cushion and continuous profitability even during difficult periods. Their higher equity capital provides them a cushion against unexpected losses and therefore helps them to survive and avoid risk of insolvency. Net interest margin (NIM) has a positive significant relationship with bank stock performance, indicating that interest margin has a positive influence on bank stock performance in ASEAN. The plausible reason is that ASEAN banks are well capitalized and more effective and which lead to increase in their stock performance since high NIM and stock performance are expected to be related with high quantity of cost and capital.

5.2 Contribution

5.2.1 Body of Knowledge

The findings of this study is beneficial to other academics. It is useful because of its contribution to body of knowledge particularly on the relationship between bank lending and bank stock performance. This study also gives empirical evidence of the association between bank loans, bank size, bank capitalization, net interest margin with bank stock performance in ASEAN.

5.2.2   Policy Implications

This study is also of important to policymakers in both ASEAN and other countries since it enhances formulation of policies involving monetary policies and financial institutions, through enacting law that will positively develop financial institutions and financial intermediaries. This can be done by creating measures that will proliferate the relationship between banking institutions and stock market in order to improve bank loans, bank size, bank capitalization and interest margin; and also to prevent bankruptcy, high inflation, financial distress, inefficient money supply, unemployment and high foreign exchange rate.

5.2.3   Practical implications

This study is important to banking practitioners because it indicate the value of bank lending to bank stock performance, and enables the improvement of bank management practices and principles towards bank lending and its relationship with stock performance. The findings indicate that ASEAN banks needs to improve in their bank lending policies by increasing their bank loan supply so as to influence stock price movements, and then improve stock returns. ASEAN bank also need to improve their mechanisms in order to be successful in the stiff competitive credit market and interbank placement of idle funds in foreign countries.

5.3 Limitations of the Study

This study is limited to the bank lending and bank stock performance variables in ASEAN. Though, the data for this study only contains data of banks listed in various stock exchange

in ASEAN. Therefore, the data for this study are listed bank data from six countries in ASEAN which include Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam. Meanwhile, no data from four other countries including Brunei Darussalam, Cambodia, Laos and Myanmar due to absence of stock markets these countries. In addition, the period of data collected for this study are from 2000-2014 except for Vietnam's bank data which are from 2008 to 2014 due to non-availability of bank stock return from previous years.

5.4 Suggestions for Future Research

Future research on bank lending and stock market performance may consider the impact of bank lending variables on stock performance of other various kinds of banks such as investment banks, merchant banks and Islamic banks. Furthermore, future studies can also focus on other bank lending such as bank deposit, performing loans and so on. In addition, future research may also investigate this association from other countries, continents or regions in order to prove more reliable findings on the link between bank lending variables and stock market performance.

REFERENCES

Abreu, M., & Mendes, V. (2001). Commercial bank interest margins and profitability: evidence for some EU countries. In *Pan-European Conference Jointly Organised by the IEFS-UK & University of Macedonia Economic & Social Sciences, Thessaloniki, Greece, May* (pp. 17-20).

Aebi, V., Sabato, G., & Schmid, M. (2012). Risk management, corporate governance, and bank performance in the financial crisis. *Journal of Banking & Finance*, *36*(12), 3213-3226.

Akella, S. R., & Chen, S. J. (1990). Interest rate sensitivity of bank stock returns: Specification effects and structural changes. *Journal of Financial Research*, *13*(2), 147-154.

Akhavein, J. D., Berger, A. N., & Humphrey, D. B. (1997). The effects of megamergers on efficiency and prices: Evidence from a bank profit function.*Review of industrial Organization*, *12*(1), 95-139.

Almutair, S. (2015). Dynamics of the Relationship between Bank Loans and Stock Prices in Saudi Arabia. *The International Business & Economics Research Journal (Online)*, *14*(3), 439.

Angbazo, L. (1997). Commercial bank net interest margins, default risk, interest-rate risk, and off-balance sheet banking. *Journal of Banking & Finance*, *21*(1), 55-87.

Ariff, M. (1996). Effects of Financial Liberalization on Four Southeast Asian Financial Markets, 1973–94. *ASEAN Economic Bulletin*, 325-338.

Asia Matters for America. http://www.asiamattersforamerica.org/asean

Aviat, A., & Coeurdacier, N. (2007). The geography of trade in goods and asset holdings. Journal of International Economics, 71(1), 22-51.

Athukoralge, P. C. (2001). Crisis and recovery in Malaysia: the role of capital controls. *Edward Elgar Publishing.*

Bacha, O. I. (1998). Malaysia: From currency to banking crisis. *Malaysian Journal of Economic Studies*, *35*(1/2), 73.

Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of financial economics*, *9*(1), 3-18.

Barber, B. M., & Lyon, J. D. (1997). Firm Size, Book-to-Market Ratio, and Security Returns: A Holdout Sample of Financial Firms. *The Journal of Finance*, *52*(2), 875-883.

Bashir, A. M. & Hassan, M.K. (2003). Determinants of Islamic Banking Profitability, presented on the ERF 10th Annual Conference. (www.erf.org.eg/tenthconf/Financial_Markets_Presented/Kabir_Bashir.pdf)

Basel Committee on Banking Supervision, (2004), International Convergence of Capital Measurement and Capital Standards, Basel, BIS.

Beccalli, E., Casu, B., & Girardone, C. (2006). Efficiency and stock performance in European banking. *Journal of Business Finance & Accounting*, *33*(1-2), 245-262.

Berger, A. N. (1995). The relationship between capital and earnings in banking. *Journal of money, credit and Banking*, *27*(2), 432-456.

Berger, A. N., Herring, R. J., & Szegö, G. P. (1995). The role of capital in financial institutions. *Journal of Banking & Finance*, *19*(3), 393-430.

66

Berger, A. N., & Bouwman, C. H. (2009). Bank capital, survival, and performance around financial crises. *Documento de trabajo, Wharton Financial Institutions Center. Disponible en: http://fic. wharton. upenn. edu/fic/papers/09/0924. pdf*.

Berger, A. N., & Bouwman, C. H. (2013). How does capital affect bank performance during financial crises?. *Journal of Financial Economics*,*109*(1), 146-176.

Berger, A. N., Hanweck, G. A., & Humphrey, D. B. (1987). Competitive viability in banking: Scale, scope, and product mix economies. *Journal of monetary economics*, *20*(3), 501-520.

Biers, D. (1998). Crash of '97: how the financial crisis is reshaping Asia. Far Eastern Economic Review (Hong Kong).

Bikker, J. A., & Haaf, K. (2002). Competition, concentration and their relationship: An empirical analysis of the banking industry. *Journal of Banking & Finance*, *26*(11), 2191-2214.

Black, F. (1972). Capital market equilibrium with restricted borrowing. *The Journal of Business*, *45*(3), 444-455.

Boscaljon, B., & Ho, C. C. (2005). Information content of bank loan announcements to Asian corporations during periods of economic uncertainty. *Journal of Banking & Finance*, *29*(2), 369-389.

Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance*, *13*(1), 65-79.

Boyd, J. H., & Runkle, D. E. (1993). Size and performance of banking firms: Testing the predictions of theory. *Journal of monetary economics*, *31*(1), 47-67.

Carvalho, D. R., Ferreira, M. A., & Matos, P. P. (2013). Lending relationships and the effect of bank distress: Evidence from the 2007-2009 financial crisis.*Available at SSRN 1696246*.

Chen, N. K. (2001). Asset price fluctuations in Taiwan: Evidence from stock and real estate prices 1973 to 1992. *Journal of Asian Economics*, *12*(2), 215-232.

Chia, S. Y., & Pacini, M. (Eds.). (1997). *ASEAN in the new Asia: issues & trends* (Vol. 82). Institute of Southeast Asian Studies.

Cohen, R. B., Gompers, P. A., & Vuolteenaho, T. (2002). Who underreacts to cash-flow news? Evidence from trading between individuals and institutions.*Journal of financial Economics*, *66*(2), 409-462.

Cooper, M. J., Jackson, W. E., & Patterson, G. A. (2003). Evidence of predictability in the cross-section of bank stock returns. *Journal of Banking & Finance*, *27*(5), 817-850.

Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, *13*(2), 379-408.

Demirgüç-Kunt, A., & Huizinga, H. (2010). Bank activity and funding strategies: The impact on risk and returns. *Journal of Financial Economics*,*98*(3), 626-650.

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

Demirgüç-Kunt, A., & Maksimovic, V. (1996). Stock market development and financing choices of firms. *The World Bank Economic Review*, *10*(2), 341-369.

68

Devakula, P. (2001, July). Monetary policy in Thailand: current challenges and Prospects. in *APFA 2001 Conference, Bangkok* (Vol. 24).

DeYoung, R., & Hasan, I. (1998). The performance of de novo commercial banks: A profit efficiency approach. *Journal of Banking & Finance*, *22*(5), 565-587.

Elyasiani, E., & Mansur, I. (1998). Sensitivity of the bank stock returns distribution to changes in the level and volatility of interest rate: A GARCH-M model. *Journal of Banking & Finance*, *22*(5), 535-563.

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, *47*(2), 427-465.

Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. *The Journal of Political Economy*, 607-636.

Foong, L.K., Lok, T.W. & Hoon, Y.Y. (2012). The impact of macroeconomic variables on banks' stock returns: evidence from Malaysia. BSc. Degree research project. Universiti Tunku AbdulRahman Malaysia.

Furletti, M. J. (2003). Credit card pricing developments and their disclosure. *Federal Reserve Bank of Philla Payment Cards Center Discussion Paper*, (03-02).

Gandhi, P., & Lustig, H. (2010). *Size anomalies in US bank stock returns: A fiscal explanation* (No. w16553). National Bureau of Economic Research.

Gelos, M. G. (2006). *Banking Spreads in Latin America* (No. 6-44). International Monetary Fund.

Gertler, M., & Kiyotaki, N. (2010). Financial intermediation and credit policy in business cycle analysis. *Handbook of monetary economics*, *3*(3), 547-599.

Goddard, J., Molyneux, P., & Wilson, J. O. (2004). The profitability of European banks: a cross-sectional and dynamic panel analysis. *The Manchester School*, *72*(3),363-381.

Handbook, C. (2010). Loan portfolio management, Comptroller of the Currency Administrator of National Banks, USA.

Hanweck, G. A., & Ryu, L. H. (2005). The sensitivity of bank net interest margins and profitability to credit, interest-rate, and term-structure shocks across bank product specializations.

Hasan, I., & Sarkar, S. (2002). Banks' option to lend, interest rate sensitivity, and credit availability. *Review of Derivatives Research*, *5*(3), 213-250.

Haslem, J. A. (1968). A statistical analysis of the relative profitability of commercial banks. *The Journal of finance*, *23*(1), 167-176.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). Upper Saddle River, NJ: Pearson Prentice Hall.

Hsiao, C. (1986). Analysis of Panel Data, Econometric Society Monograph No. 11.

Ho, T. S., & Saunders, A. (1981). The determinants of bank interest margins: theory and empirical evidence. *Journal of Financial and Quantitative analysis*, *16*(04), 581-600.

Holmstrom, B., & Tirole, J. (1997). Financial intermediation, loanable funds, and the real sector. *The Quarterly Journal of economics, 663-691.*

Hughes, J. P., Lang, W. W., Mester, L. J., & Moon, C. G. (1999). The dollars and sense of bank consolidation. *journal of banking & finance*, *23*(2), 291-324.

Humphrey, D. B., & Pulley, L. B. (1997). Banks' responses to deregulation: Profits, technology, and efficiency. *Journal of Money, Credit, and Banking*, 73-93.

Ibrahim, M. H. (2006). Stock prices and bank loan dynamics in a developing country: The case of Malaysia. *Journal of Applied Economics*, *9*(1), 71.

Ioannidis, C., & Kontonikas, A. (2008). The impact of monetary policy on stock prices. *Journal of Policy Modeling*, *30*(1), 33-53.

Jeanneau, S., & Micu, M. (2002). Determinants of international bank lending to emerging market countries.

Karim, B. A., Lih, L. S., & Karim, Z. A. (2012). Bank loans and stock prices: An empirical evidence. *Aceh International Journal of Social Science*, *1*(2).

Karkrah. J and Ameyaw. V. W. (2010). Information Finance Markets. Conclusions. New Agriculture is Transforming. Demand for Rural Financial Services

Kim, S. B., & Moreno, R. (1994). Stock prices and bank lending behavior in Japan. *Economic Review-Federal Reserve Bank of San Francisco*, (1), 31.

Kosmidou, K., Pasiouras, F., Doumpos, M., & Zopounidis, C. (2004). Foreign versus domestic banks' performance in the UK: a multicriteria approach.*Computational Management Science*, *1*(3-4), 329-343.

Kosmidou, K., & Zopounidis, C. (2008). Measurement of bank performance in Greece. *South- Eastern Europe Journal of Economics*, *1*(1), 79-95.

71

Kuttner, K. N. (2001). Monetary policy surprises and interest rates: Evidence from the Fed funds futures market. *Journal of monetary economics*, *47*(3), 523-544.

Laruccia, E., & Revoltella, D. (2000). Banking Systems Stability in Developing and Transition Economies: An Analisys of the Determinants of Moodys Bank Financial Strength Rating. *Banca commerciale italiana.*

Le Bras, A., & Andrews, D. (2004). Bank rating methodology: Criteria report.*FitchRatings (available at www. fitchratings. com),(25 May).*

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

Liadaki, A. & Gaganis, C. (2010). Efficiency and stock performance of EU banks: is there a relationship? Omega, 38(5), 254-259

Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *The review of economics and statistics*, 13-37.

Lummer, S. L., & McConnell, J. J. (1989). Further evidence on the bank lending process and the capital-market response to bank loan agreements.*Journal of Financial Economics*, *25*(1), 99-122.

Madura, J., & Schnusenberg, O. (2000). Effect of Federal Reserve policies on bank equity returns. *Journal of Financial Research*, *23*(4), 421-447.

Madura, J., & Zarruk, E. R. (1995). Bank exposure to interest rate risk: A global perspective. *Journal of Financial Research*, *18*(1), 1-13.

Markowitz, H. (1952). Portfolio selection. *The journal of finance*, *7*(1), 77-91.

Mason H. K., Howard M. G., & Ncube B. (2006). Industry Forecasting Framework for Bank Margins‖, Black Book - From Bigger to Better: The Improving Business Models of Chain Banks, p137-152

Meh, C. A., & Moran, K. (2010). The role of bank capital in the propagation of shocks. *Journal of Economic Dynamics and Control*, *34*(3), 555-576.

Merton, R. C. (1973). An intertemporal capital asset pricing model. *Econometrica: Journal of the Econometric Society*, 867-887.

Molyneux, P., Thorton, J., 1992. Determinants of European bank profitability: a note. *J. Bank. Finance 16 (6),* 1173–1178.

Mossin, J. (1966). Equilibrium in a capital asset market. *Econometrica: Journal of the econometric society*, 768-783.

Musyoki, D., & Kadubo, A. S. (2012). The impact of credit risk management on the financial performance of Banks in Kenya for the period.

Naceur, S. B. (2003). The determinants of the Tunisian banking industry profitability: Panel evidence. *Universite Libre de Tunis working papers*.

Palac-McMiken, E. D. (1997). An examination of ASEAN stock markets: a cointegration approach. *ASEAN Economic Bulletin*, 299-311.

Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, *21*(2), 222-237.

Pasiouras, F., Gaganis, C., & Zopounidis, C. (2006). The impact of bank regulations, supervision, market structure, and bank characteristics on individual bank ratings: A cross-country analysis. *Review of Quantitative Finance and Accounting*, *27*(4), 403-438.

Pasiouras, F., Gaganis, C., & Doumpos, M. (2007). A multicriteria discrimination approach for the credit rating of Asian banks. *Annals of Finance*, *3*(3), 351-367.

Phuvanatnaranubala, T. (2005). Globalisation, financial markets and the operation of monetary policy: the case of Thailand. *BIS Papers*, *23*, 269-274.

Pilbeam, K. (2005). Financial Intermediation and Financial Markets. In*Finance and Financial Markets* (pp. 22-38). Macmillan Education UK.

Poon, W. P., & Firth, M. (2005). Are unsolicited credit ratings lower? International evidence from bank ratings. *Journal of Business Finance & Accounting*, *32*(9-10), 1741-1771.

Poon, W. P., Lee, J., & Gup, B. E. (2009). Do solicitations matter in bank credit ratings? Results from a study of 72 countries. *Journal of Money, Credit and Banking*, *41*(2-3), 285-314.

Price, M. M. (1994). Emerging stock markets: a complete investment guide to new markets around the world. New York: McGraw-Hill.

Rasiah, D. (2010). Review of literature and theories on determinants of commercial bank profitability. *Journal of Performance Management*, *23*(1), 23.

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

Rose, A. K., & Spiegel, M. M. (2004). A gravity model of sovereign lending: trade, default, and credit. IMF Economic Review, 51(1), 50-63.

Saunders, A., & Schumacher, L. (2000). The determinants of bank interest rate margins: an international study. *Journal of international money and finance*, *19*(6), 813-832.

Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The journal of finance*, *19*(3), 425-442.

Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe, and Japan. *Journal of Banking & Finance*, *3*(3), 209-219.

Siregar, R. Y., & Choy, K. M. (2010). Determinants of international bank lending from the developed world to East Asia. *IMF Staff Papers*, *57*(2), 484-516.

Slovin, M. B., Sushka, M. E., & Polonchek, J. A. (1992). Informational externalities of seasoned equity issues: differences between banks and industrial firms. *Journal of Financial Economics*, *32*(1), 87-101.

Smirlock, M. (1985). Evidence on the (non) relationship between concentration and profitability in banking. *Journal of money, credit and Banking*, *17*(1), 69-83.

Staikouras, C. and G. Wood (2003).The Determinants of Bank Profitability in Europe, Paper presented at the European Applied Business Research Conference.

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American economic review*, *71*(3), 393-410.

Sufian, F., & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: Empirical evidence from the Philippines. *Asian academy of management journal of accounting and finance*, *4*(2), 91-112.

Suna, L., & Changb, T. P. A. (2010). Comprehensive analysis of the effects of risk measures on bank efficiency: Evidence.

Tongzon, J. L. (1998). *The economies of Southeast Asia: the growth and development of ASEAN economies*. Edward Elgar Publishing.

Unite, A. A., & Sullivan, M. J. (2003). The effect of foreign entry and ownership structure on the Philippine domestic banking market. *Journal of Banking & Finance*, *27*(12), 2323-2345.

Van Roy, P. (2006). Is there a difference between solicited and unsolicited bank ratings and, if so, why?. *National Bank of Belgium working paper*.

Vong, L. K. (2005). Loans and profitability of banks in Macao. *AMCM Quarterly Bulletin*, *2*, 91-107.

Vong, A. P., & Chan, H. S. (2009). Determinants of bank profitability in Macao. *Macau Monetary Research Bulletin*, *12*(6), 93-113.

Waheed, A., & Mathur, I. (1993). The effects of announcements of bank lending agreements on the market values of US banks. *Financial Management*, 119-127.

World Federation of Exchanges (2013)
http://www.worldexchanges.org/home/index.php/statistics

World Stock Exchange Fact Book (1997). Meridian securities markets. LLC: Austin.

Xu, Y. (2010). *Empirical Essays on the Stock Returns, Risk Management, and Liquidity Creation of Banks* (No. EPS-2010-188-F&A).

Yartey, C. A. (2008). The determinants of stock market development in emerging economies:is South Africa different?. *IMF Working Papers*, 1-31.