INTERNAL DETERMINATS OF PERFORMANCE OF LOCAL AND FOREIGN BANKS IN MALAYSIA

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CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This chapter explains the background of the study model and problem statement, which is the performance of banks in Malaysia, will be briefly discussed. Followed by, research objectives which had clearly set to precede purpose of in this study. Next, the research questions were constructed to define the problem. Some hypotheses were proposed for the study. Lastly, the significance of the study and the finally is conclusion.

1.1 Research Background

Banks is the critical part of financial system, as it plays an important role in contributing to the operation of most economies. Recent research, as surveyed by Levine (1997), shows that the efficacy of financial intermediation can affect economic growth while at the same time bank insolvencies can result in systemic crises which have adverse consequences for the economy as a whole. In other words, banks are important in financing economic activity and contribute to the stability of the financial system.

Each country is interested in creating a solid banking system, which allows the organizational framework to ensure a proper expansion of financial relations in the economy. Stable banking systems are able to maintain efficiency in unforeseen situations and to generate incentives and credible financial information for all participants. Yet, if the banking industry does not perform well, the effect to the economy could be huge and broad.

Presently, the Malaysian banking system, which comprises of the commercial banks, investment bank, Islamic banks, and foreign banks, is the major institutional source of credit to the economic sector. Within the banking system, the commercial banks are the major players that accounted for about 42% of the total assets of the financial system as at the end of 2007 (IBBM 2007). Based on Bank Negara Malaysia, there were 25 commercial banks, which 8 are local banks and 17 are foreign-owned banks. The main functions of commercial banks are to provide retail banking services, for instance, acceptance of deposit, granting of loans and advances, and financial guarantees. (BNM: 2012)

Table 1: List of Commercial Banks in Malaysia

No.	Name of Commercial Banks	Ownership
1.	Affin Bank Berhad	Local
2.	Alliance Bank Malaysia Berhad	Local
3.	AmBank (M) Berhad	Local
4.	Bangkok Bank Berhad	Foreign
5.	Bank of America Malaysia Berhad	Foreign
6.	Bank of China (Malaysia) Berhad	Foreign
7.	Bank of Tokyo-Mitsubishi UFJ (Malaysia) Berhad	Foreign
8.	BNP Paribas Malaysia Berhad	Foreign
9.	CIMB Bank Berhad	Local
10.	Citibank Berhad	Foreign
11.	Deutsche Bank (Malaysia) Berhad	Foreign
12.	Hong Leong Bank Berhad	Local
13.	HSBC Bank Malaysia Berhad	Foreign
14.	Industrial and Commercial Bank of China (Malaysia) Berhad	Foreign
15.	J.P. Morgan Chase Bank Berhad	Foreign

16.	Malayan Banking Berhad	Local
17.	Mizuho Corporate Bank (Malaysia) Berhad	Foreign
18.	OCBC Bank (Malaysia) Berhad	Foreign
19.	Public Bank Berhad	Local
20.	RHB Bank Berhad	Local
21.	Standard Chartered Bank Malaysia Berhad	Foreign
22.	Sumitomo Mitsui Banking Corporation Malaysia Berhad	Foreign
23.	The Bank of Nova Scotia Berhad	Foreign
24.	The Royal Bank of Scotland Berhad	Foreign
25.	United Overseas Bank (Malaysia) Bhd.	Foreign

Source: Bank Negara Malaysia, 2012

In addition, evaluation of bank performance is critical for all parties: depositors, banks managers and supervisors, regulators, as well as academic researchers. In a competitive financial market bank performance provides signal to depositor-investors whether to invest or withdraw funds from the bank. Similarly, it flashes direction to bank managers whether to improve its deposit service or loan service or both to improve its finance. Regulator is also interested to know for its regulation purposes. Therefore, the study of the determinants of the bank profitability becomes an important issue which could help banks understand the current conditions of the banking industry they are involved in and the critical factors they should consider in making decisions and creating new policies either for recovery or improvement.

In the economic reality from our days, banks face several challenges to sustain the economic development of every country, including still-difficult economic conditions, continued uncertainties in real estate and other key markets and a changing regulatory environment. There are a lot of threats and banking risks which can interfere in the bank's activity, like providing loans, with a great influence over the performance and profitability.

Previous studies (Short, 1979; Bourtke, 1989; Molyneux and Thornton, 1992; Demirguc-Kunt and Huizinga, 2000) on bank profitability are usually determined by the internal and external factors. The internal factors refer to the factors that originate from bank accounts therefore could be termed micro or bank-specific determinants of profitability. The external factors are variables that reflect the economic and legal environment that affects the operation and performance of financial institutions. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study.

Based on the reviews of previous studies, this study aims to test whether previous results are applicable to the Malaysian banking industry. It is also considered that given the fact of increased competition in the banking industry in Malaysia, it is worthwhile to identify the main determinants of Malaysian local and foreign commercial banks' profitability. Therefore, this study looks into the aspects of the factors that lead to performance of Malaysian local and foreign commercial bank in different extents, during the ten-year period beginning of 2001 until 2010. In this study, we mainly focus on commercial banks, which being the main players in the banking system. Liquidity risks, credit risk, operating expenses, bank size, and asset quality are selected as the variables.

1.2 Determinants of Banks Performance

Banks are the critical part of financial system which plays an important role in contributing to a country's economic development. If the banking industry is not perform well will affect the economy directly. The poor performance of the banking industry has slowed down the economy and the growth of the global economy. Bank profitability is an important predictor of financial crises. Therefore, the bank profitability becomes an important issue which could help banks understand the current conditions of the banking industry they are involved

in (William C. Spaulding, 2011) and the critical factors they should consider in making decisions and creating new policies either for recovery or improvement.

Liquidity risk also affects the profitability of bank. Based on researchers Mathias Drehman and Kleopatra Nikolaou (2009, March) liquidity risk is an endogenous determinant of bank performance because its' causes of liquidity risk include the components of liquid assets and dependence on external funding. Liquidity measures the solvency of banks and indicates how fast a bank can meet debt. It is important to monitor liquidity ratios and it requires frequent updating because they change rapidly. Therefore, higher liquidity ratios indicate better solvency and less risk exposure.

Credit risk is a key element in the bank's profitability. Good credit risk decisions will help a bank operate profitably. Credit risk arises whenever a borrower is expecting to use future cash flows to pay a current debt. Investors are compensated for assuming credit risk by the way of interest payments from the borrower or issuer of a debt obligation based on researcher Glyn A. Holton (2003). However, credit risk is closely tied to the potential return of an investment, the most notable being that the yields on the bonds correlate strongly to their perceived credit risk. In order to get the credit risk, we can use the loan-loss provisions divided by the net interest revenue.

Bank profitability can be also measure by the operating expenses because its' has positively related to loan quality and the asset size or the bank's market share. This is due to the fact that operating expenses efficiency becomes the particular interest for banks, whose objective is to improve the performance of their financial system. The operating expense can be calculated by the non-interest expenses divide by the average assets of the periods. Based on the researcher Joshua Kennon, (2012) operating expenses also consists of salaries paid to employees, resserach and development costs, legal fees, business licenses and so

on, so in short, operating expenses can be the important factors that affect the performance of a bank.

Bank size can affect the profitability of bank. Bank size is considered an internal determinant on the assumption that management of the bank is responsible for expanding their financial operations by acquiring additional assets and liabilities. Based on researchers Allen N. Berger, Richard J. Rosen and Gregory F. Udell (2001, October) shown that the impact of bank size structure are able to contribute to the different stands of the literature on small business credit, which the effects of banking market size structure on the size of bank from small business suggests that some prior studies of small business credit availability maybe misleading. Natural logarithm of total assets is the measurement of bank size, the higher the bank size, the higher the chances the bank can increase their bank operations and bank profitability.

Asset quality involves taking account of the likelihood of borrowers paying bank loans that will affect the performance of banks. Loan loss provisions over gross loans measure the amount of the total asset quality. Assets quality could pose a challenge for bank profitability, with some borrowers continuing to default on loans even after they are restructured. But the bad loan losses are likely to be compensated by a rise in interest margins as the high-cost deposits shrink. The evaluation of asset quality in the branch is important in assessing the effectiveness of credit and transfer risk management and in the event of a possible liquidation of a branch shown by branch and agency examination manual (1997, July).

1.3 Problem Statement

In July 1997, Asian financial crisis happened where there was a period of financial crisis that gripped much of Asian and thus raised fears of a worldwide economic meltdown due to the financial contagion. This crisis was started in Thailand which

had affected the most where the Thai baht collapse and force the Thai government to float the baht. Other than Thailand was affected badly, other countries like Hong Kong, Malaysia, Laos and Philippines were also hurt by the slump.

Before the crisis, Malaysia had a large current account deficit of 5% of its GDP and at the time was also a popular investment destination which also reflected in KLSE activity due to the most active stock exchange in the world. However, in July 1997, when the Thai baht devaluation, the Malaysian ringgit was attracted by speculators causes the overnight rate jumped from 8% to over 40%, thus led to rating downgrades and generally forced to sell off the stock and currency markets. By the end of 1997, ratings had fallen many notches from investment grade to junk, caused the KLSE lost more than 50% and the ringgit had lost 50% of its value falling from above 2.50 to become 4.57 in January, 1998 to the dollar.

Banks is one of the financial institutions that could affect the movement of the financial fluctuation as well as economic condition. The performance of bank is well concerned by the public as it could affect the flow of economic. Theoretically, investors and depositors feel more confident and secure whenever the profitability ratio like return on asset and return on equity is greater. However, those external factors are unable to manipulate by banks to improve their performance.

Other than external factors like GDP growth, inflation and concentration, the internal factors like assets quality, liquidity risk and bank size also the important variables that affect the performance of bank. Rasiah (2010) suggested that rather than the external factors, internal factors are the main reason directly affecting to the profitability of bank. Which of the internal determinants could help or harm the performance of banks in Malaysia? Which financial ratio should banks in Malaysia focus to enhance their performance? It could be meaning that the management of bank performance is important by adjusting through the accounting ratios as those ratios are accessible to banks.

One of previous researchers, Omran (2007) has analyzed the performance of banks in Egypt by using accounting performance measurement like asset quality, capital risk, operating efficiency ratio, liquidity risk ratio, and asset growth rate. Author used both internal factors to measure the performance of banks instead including any external factors.

With the supporting information, this is good opportunity for us to understand further about do the performance of bank interrelated to the accounting ratio example asset quality, liquidity risk as well as bank size. We attempt to find out which internal determinants have significantly affecting to the profitability of bank and the comparing the performance of local and foreign banks as it might help us in the future.

1.4 Research Objectives

The purpose of this research is to examine the determinants which could affect the performance of local and foreign banks in Malaysia by using financial ratios. The bank performances are measured by Return on Asset (ROA), which is the dependent variable of the whole research. The objectives of the proposed study are:

1. Determine and examine the performances of local and foreign banks after realizing the decrease of banks' profitability in Malaysia lately by using financial ratios including credit risk, liquidity risk, operating expenses, bank size and asset quality.
2. To examine which factor should banks focus on to optimize their performance.
3. To examine the performance of local and foreign banks over the period.

1.5 Research Questions

The motive to conduct this research is to identify the performance of bank by comparing local banks and foreign banks based in Malaysia; thereby it enables to answer the research question.

1. Do liquidity risk important to performance of the banks?
2. Does asset quality affect the bank performances?
3. Do operating expenses able to evaluate the performance of the bank?
4. Does bank size affect the profitability of the banks?
5. Is there any relationship between the credit risk and bank performances?
6. Which variables affect the local and foreign banks in Malaysia the most?

1.6 Hypothesis of the Study

First hypothesis:

H_0: There is no significant relationship between liquidity risk and the profitability of bank.

H_1: There is a significant relationship between liquidity risk and the profitability of bank.

Second hypothesis:

H_0: There is no significant relationship between credit risk and the profitability of bank.

H_1: There is a significant relationship between credit risk and the profitability of bank.

Third hypothesis:

H_0: There is no significant relationship between operating expenses and the profitability of bank.

H_1: There is a significant relationship between operating expenses and the profitability of bank.

Fourth hypothesis:

H_0: There is no significant relationship between bank size and the profitability of bank.

H_1: There is a significant relationship between bank size and the profitability of bank.

Fifth hypothesis:

H_0: There is no significant relationship between asset quality and the profitability of bank.

H_1: There is a significant relationship between asset quality and the profitability of bank.

1.7 Significance of the Study

The main purpose of this study is to determine the bank performances of local and foreign banks in Malaysia by using the financial ratios. We are using the financial ratios which include the capital ratio, liquidity risk, operating expenses, bank size and asset quality as the variables to test which is critical factor to performance of banks. These variables are highly related to the bank performances. We are selecting one formula for each category of the financial ratios as to get more accurate results indicating the bank performances for both local and foreign. The results of the research are useful for the investors, governments and students who are currently pursuing their studies in banking courses. Most importantly, banks

could know which factors they should enhance in order to optimize their performance.

This thesis is aim to provide a general knowledge to all relevant users such as all those individuals that are engaging in investment activities. From the perspective of investors, they are interested in knowing how well the banks have been performing all the time. This research will be able to provide more details on how well the bank have been managed and performed all the while. A well performed bank will be ready and able to manage and handle any situation that will bring huge impact to the bank. For example, financial crisis due to political issues or any natural disaster which will affect the economy of the world. Besides that, the research conducted will be able to let the investors know the differences of a bank performance for the local and foreign banks.

Also, the organization internal users such as employees, managers, suppliers, government can benefit themselves from this research too. The managers and investors will also be able to have a better decision making in their work and choices of investment respectively. Any bank with weak performances will eventually be left out from the choice of investment. In the same time, the managers will then be able to focus and start to create strategies and new plans to overcome the problems and strengthen the bank's profitability.

As from the undergraduates' perspectives, this research helps to provide more knowledge and information regarding the banking industry today. Students tend to understand more on the differences of how the local and foreign banks operates themselves and is there any big differences in the way they had managed the bank. On the other hand, this research would be able to act as a pre-research data for the future investigation such as impact on Malaysia's current banking industry according to the bank performances of local and foreign banks in Malaysia.

1.8 Chapter Layout

Chapter 1 is the introductory which provide an overview of the study context and explanations the research problem. It cover introduction, the research background, problem statement, and the research objectives which consist of the general objective and specific objectives, research questions, hypothesis and significance of the study.

The purpose of chapter 2 is cover the literature review, relevant theoretical models review, proposed framework and hypotheses development.

Chapter 3 is an introductory overview of the research methodology, which describes how the research is carried out. The methodology to be carried out during the research, which includes research design, sampling design, and research instrument, constructs measurement, data processing and data analysis.

Chapter 4 is presenting the patterns of the results and analyses of the result of the relevant research questions and hypotheses from the data collected and it will be analyzed through descriptive analyses, scale measurement and inferential analyses.

Chapter 5 provides all conclusion of the entire project in line and provides the linkage to next chapter. It covers the discussion of major findings, conclusion and implications of the study. The recommendations can be refer from both topic and methodology for future research.

1.9 Conclusion

In conclusion, Chapter 1 mainly is a brief introduction of the whole research paper which consist a few parts. Research background and problem statement are where we discussed about the bank performances in Malaysia at this current period and

the issues and problems behind it. The objectives of the paper were also stated and the questions to the research are mainly on the factors affecting the bank performances. Hypotheses were made from the determinants of the bank's profitability. Also, it includes a brief discussion on the financial ratios used to determine the bank performance. Overall, this chapter includes the research background, problem statement, research objectives, research questions, hypotheses and significance of study. It provides complete guidance and the following chapters will be discussed precisely in order to explain more in depth regarding about this research.

CHAPTER 2: REVIEW OF LITERATURE

2.0 Introduction

The purpose of this chapter is cover the literature review, relevant theoretical models review, proposed framework and hypotheses development. We have included the variable such as the capital, bank size, debt ratio, asset quality, liquidity risk and credit risk.

2.1 Review of the Literature

Figure 2.1: Return on Assets and Independent Variables

Figure 2.1 shows all of the variables included in our study. Return on Assets is dependent variables, while independent variables comprises of liquidity risk, credit risk, operating expenses, bank size, and asset quality.

2.1.1 Dependent Variable

Performance of bank is measured by the profitability ratio, to determine whether the bank is gaining profit or losing. Most of studies used Return on assets as the dependent variable for research related performance of bank.

2.1.1.1 Return on Assets

Return on assets (ROA) is defined as the ratio of net profits to average total assets expressed as a percentage. It is an indicator to measure the profitability of the companies comparing with same industry. The ratio shows below:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

ROA is generally use to compare the performance and profitability between banks as the majority of banks assets will have a carry value that is close to their actual market value. However, ROA is not giving out an effective result if comparing with different industries, example banks to insurance companies although they are financial institutions, because the subject of reserve requirements is different scale among insurance companies and banks. Golin (2001) pointed out the ROA has recognized as the key

ratio for the estimation of bank profitability and has become the most basic measure of bank performance in the literature.

Mentioned in the research of Khrawish (2011) , it is said that the rate of return of a bank' total assets shows the efficiency of its management in generating net income from all of the resources committed to the institution Rose, Peter S. and Hudgins, Sylvia C. (2008). Sufian (2011) also states that ROA is often expressed as a function of internal and external determinants. He agreed with past researchers such as Hassan and Bashir (2003) and Rivard and Thomas (1997) that ROA shows the profit earned per dollar of assets and also the reflection of bank's management's ability to utilize the bank's resources in order to generate profits. At the same time, Rivard and Thomas (1997) also suggested that ROA is the best choice to measure a bank's profitability because it will not be affected by high equity multipliers. On the other hand, the relationship between bank performances and ROA as the indicator of bank's profitability measurement is argued by Demerguc-Kunt and Huizingha (1999), Cavallo and Majnoni (2001), Bashir and Abdel Hamid M. (2003) and Laeven and Majnoni (2003).

2.1.2 Independent variables

The management controllable factors that affect bank revenue and costs will be analyzed. The this extent, the internal factors which tend to have a direct impact on bank net income are the banks' assets and liability portfolio management and overhead expenses management. On the other hand, liquidity ratio and capital ratios tend to have an indirect effect on bank profitability.

2.1.2.1 Liquidity Risk

Olweny and Shipho (2011) mentioned that the managers of commercial banks often take the liquidity management as one of the decision making. The measurement of their needs related to the process of deposits and loans. The importance of liquidity goes beyond the individual bank as a liquidity shortfall at an individual bank can have systemic repercussions (CBK, 2009). It is argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns (Kamau, 2009). A shift from short term securities to long term securities were observed due to the existence of trade-offs between return and liquidity risk. It also increases its liquidity risks and the inverse in is true. Thus, a high liquidity ratio shows that a bank is not that profitable and less risky. (Hempel et al, 1994).

Kosmidou, Pasiouras, Zopounidis and Doumpos (2004) found that the earning assets to total loans ratio had reflected the liquidity and risk positions of the bank. Banks most of the time prefer to hold liquid assets that can be easily converted into cash in order to avoid insolvency risk. However, liquid assets are usually associated with lower rates of return and so generally a negative relationship is expected. The findings of the study appear to have the same conclusion with Hempel (1994) which is higher liquidity would be associated with lower profitability (Kosmidou, Pasiouras and Tsaklanganos, 2006). A higher ratio indicates a larger proportion of short-term investments to total loans held by banks, resulting in a lower profitability and low risk of technical insolvency. As for the evidence, Molyneux and Thorton (1992) and Al-Khouri found a weak negative relationship, whereas Bourke (1989) found a strong

positive relationship between liquidity and bank profitability. Al-Khouri (2009) used the ratio liquid assets to deposits and had proved a negative relationship to ROA but positive relationship to ROE.

Pasiouras and Kosmidou (2007) studies on the case of foreign banks provides result contrary to the expectations but consistent with the studies of Bourke (1989) and Kosmidou (2006) which have the finding showing a positive relationship between liquidity and banks profits. As for the domestic banks, the ratio net loans to customer and short term funding is statistically significant and positively related to the profitability, indicating a negative relationship between bank profitability and the level of liquid assets held by the bank, and consistent with our expectations and some earlier studies (e.g., Molyneux and Thorton, 1992; Guru et al., 1999).

In terms of research for rival banks, researchers Cornett, McNutt and Tehranian (2005) also agree with Pasiourus and Kosmidou (2007) studies by stating that the increase in the adjusted loans to assets is generally not a positive sign for a bank's liquidity as it signals that a significantly greater amount of assets are in the form of less liquid loans. However, along with the increase in loans, a significant portion of the financing of the additional loans comes from the core deposits. Thus, even though liquidity is stretched with the increase in loans, the rival banks increase their holdings of cash and investment securities to offset and reduce liquidity risk.

Even though the results from the studies of Kosmidou, Tanna and Pasiouras (n.d.) indicated an expected negative sign for the liquidity ratio, it is only significant in the presence of external

factors. Kosmidou (2006) and Pasiouras (2006) also confirm this negative effect on net interest margin. Hence, the effect of liquidity on bank profit is not clear-cut due to the variability of measure of profitability used.

In conclusion, most of the researchers have the result of negatively related between the variable and bank performance. Only one researcher has the evidence of having a contrary result compare to rest which is a positive relationship among liquidity and bank profitability. A bank is required to hold more of liquid assets in order to keep them well prepared in facing incidences like sudden withdrawal from depositors or economic downturn. A right proportion of liquid assets and bank profitability should be weighted so that the bank would be able to gain profit in the same time prevent the bank from bankruptcy due to illiquidity.

2.1.2.2 Credit Risk

Joaquin Maudos and Juan Fernandez de Guevara (2004) says that on bank margins and profitability, the bank loans over total assets ratio is mainly used as a measure of bank liquidity or as a proxy for credit risk when data do not permit the calculation of the loan loss provision (Naceur and Omran, 2011). Miller and Noulas (1997) suggest a negative relationship between credit risk and profitability because a higher loan to asset ratio increases the exposure of banks to bad loans and hence lowers profit margins.

On the other hand, the rapidity of credit growth due to strong economic growth for the past few years has led to questionable credit risk assessment practices. An expectation of adverse effect of

credit risk on bank profitability is made by the researcher but the result of the research shows that credit risk is positively and significantly related to profitability as measure by ROA. Research done by Naceur and Omran (2011) shows that the impact of credit risk is positive and significant only with the bank's characteristic variables but the significant disappears when macroeconomic and financial variables are included. Besides that, researchers Saira Javaid, Jamil Anwar, Khalid Zaman and Abdul Gafoor (2011) shown that the credit risk, the banks ROA are associated with larger bank size, further bank's returns also will be affected by the macroeconomic determinants. Besides, in the study of Bourke (1989) found an important positive and significant relationship between capital adequacy and bank profitability. Credit risk is an important internal factor, thus becomes the important measurement of ROA as bank profitability. This is because cumulative default risk tends to rise over time where the default risk is closely related to liquidity transformation.

According to researchers Juan Bautista Delgado Garci, Juan Manuel de la Fuente Sabate and Esther de Quevedo Puente (2010, June) in order to measure the credit risk, the ratio of nonperforming loan to the total loan is the second measure for the year 2004. For the bank risk taking, this variable is common in the research. Based on researcher Shinichi Fukuda (2009, December), in Japan's radical financial policies, in order to reduced the liquidity risk and credit risk in the market they should included the quantitative easy measures by contributed to the performance of the overall economy and easy access to credit. Besides, A Rashad Abdel Khalik (1973) said that based on the research result all correlation coefficients sign between the probability that the firm is expected to be a good credit risk customer and the entire loan collected must be positive.

Based on researchers Darrell Duffie and Kenneth J. Singleton (2011), their main goals for this research is to measure the portfolio risk and the pricing of defaultable bonds, credit derivatives and others that exposed to credit risk. Credit risk is one of the sources of market risk and one of the consequences of this is the reliable system for pricing credit risk should be high for both trading and risk manager. There is a significant portion to devote the modeling default and associated recovery processes and the pricing of credit sensitive instruments. Recently, they more focus on the credit risk which can be traced in part to the concerns of regulatory agencies and investors regarding the risk exposure of financial institutions throughout their large position in OTC derivatives and developing markets for the price and credit sensitive instruments to trade the risk. In credit markets there are two important markets imperfections which are the adverse selection and moral hazard which can control the counterparty credit risk and also limiting concentrations of credit risk by industry.

Besides, according to Robert A. Jarrow and Stuart M. Turnbull (1995, March) research, in order to classified credit risk there are two consideration which the first one is where the asset underlying the derivative security may going default and the second is where the writer of the derivative security may default, so apply the foreign currency analogy is to decompose the dollar payoff from those risky security into the certain payoff.

In conclusion, credit risk is the principle of loss or loss of a financial reward stemming from a borrower's failure to repay a loan or otherwise meet its obligation. Credit risk will happened when borrower is using the expecting future cash flow to pay

current debt causes the investors are compensated for assuming credit risk by the way of interest payments from the borrower or issuer debt obligation. Those single counterparty, an institution will consider three issues when assessing to credit risk which are default probability, credit exposure and recovery rate.

2.1.2.3 Operating Expenses

Operational expense efficiency is one of the most common ways to determine and assess the managerial efficiency in banks. (Olweny and Shipho, 2011) Sufian and Chong (2008) said that poor expenses management is the main contributors to poor profitability. It is expected that with weak management skill for expenses of the banks, it will lead to a low profitability and poor performance of banks. It is often understood that the relationship between expenditure and profits always appear to be inversed where higher expenses mean lower profits and vice versa.

The past research often argues that increased of expenses will decrease the efficiency which will then lower down the profitability of a bank. And so, a negative relationship between operating expenses ratio and profitability (Bourke 1989). Supported by Kosmidou, Tanna and Pasiouras (n.d.), the research shows a negative and significant coefficient for the cost to income ratio and suggested that the efficiency in expenses management is a robust determinant. In the research, authors had also compared the results with past researches such as Guru et al. (1999), Kosmidou (2006) and Pasiouras et al. (2006) where their studies also shown negative relationship for Malaysia, Greece and Australia respectively.

Also, Sufian (2011) had made a research among the Korean banking sector and he found that non-interest expense to total assets shows a negative and significant impact on bank profitability in the Korean banking sector. It is suggested that if they improve their managerial practices, the bank profit will rise. Ghosh et al. (2003) and Hess and Francis (2004) observed that an inverse relationship is formed between cost to income ratio and bank profitability. Alongside with it that supported the same result is Mathuya (2009). Since the higher the cost to income ratio, the lower is the profitability; most of the banks try their best to minimize the rate if possible.

From the research of Kasman, Tunc, Vardar and Okan (2010), it is said that there is a negative and significant impact between the managerial efficiency and net interest margin. Even though the bank performance is measured by net interest margin, it is still represent the bank profitability. The result indicates that higher managerial efficiency will make the banks to offer higher deposit rates to the clients. They had compared the results with Angbazo (1997) and Maudos and de Guevar (2004) found consistency in it.

However, this may not always be the case because higher amounts of expenses may comes with higher volume of banking activities and hence, higher revenues. From the past research, a positive and significant relationship between the overhead costs and bank profitability is shown by Neceur (2003). It indicates that such cost are transferred onto depositors and lenders in terms of lower deposits rates/or higher lending rates (Neceur, 2003). In the same time, Abreu and Mendes (2001) also find that operating costs have

a positive impact on net interest margins measures but not on profits measures, while the opposite holds for bank's market share.

Another positive relationship also have been observed by Molyneux and Thornton (1992) which suggested that high profits earned by firms may be due to higher payroll expenditures paid to a more productive human capital. Sufian's (2009) finding shows that there is a positive relationship between the expenses preference behavior and Malaysian bank profitability and it is statistically significant at the 5% level. This can be explained when a more qualified and professional management may require higher pay and hence, a significant positive relationship. (Sathye, 2001; Nacuer and Goaied, 2008). Malaysian researcher Ahmad and Noor (2011) did a research on the world Islamic banks and obtained a result showing a positive and significant relationship with the bank profitability. It is consistent with the findings of Akhigbe and McNulty (2005) whom they had compared with.

In conclusion, there is a mixed result among the operating expenses and bank performance where by some researchers found a positive and significant relationship. This is because when a higher payroll is given to a higher qualification and management employee, it will tend to bring better profit to the bank. As for some other researchers that found a negative and significant relationship, when the managerial efficiency is low, the expenses will then be higher and it will decrease the bank's profitability.

2.1.2.4 Bank Size

Pasiouras and Kosmidou (2007) find a positive and significant relationship between the size and the profitability of a bank. This is because larger banks are likely to have a higher management of product and loan diversification than smaller banks, and because they should benefit from economies of scale. The reason is that large size may result in higher economies of scale that will reduce the cost of gathering and processing information (Boyd and Runkle, 1993). With the number of observations of 43 commercial banks in 6 Gulf Cooperation Council (GCC) countries over the period of 1998 to 2008, Al-Khouri (2011) also found that there is a positive and significant relationship between both bank size and return on assets. However, other researchers had provided evidence that costs are reduced only slightly by increasing the size of a bank and those very large banks often encounter scale inefficiencies. (Berger et al. 1987; Miller and Noulas 1997; Athanasoglou et al. 2005).

As stated in Naceur and Omran (2010), past researchers like Smirlock (1985) and Short (1979) found positive and significant relationship between the size and performance of the banks. Also, the findings of Naceur and Goaied (2008) have a positive and statistically significant relationship between the size and bank performance where it means large stock market relative to the banking sector will increase the bank profits. Al-Khouri (2011) also found that there is also a positive and significant relationship between both bank size and return on assets. Besides that, Suffian (2009) found a positive relationship between the bank size and profitability of the bank, but it is insignificant at any conventional level. Only by removing the foreign banks from the regression model, the coefficient is significant.

Kosmidou, Tanna, Pasiouras (n.d.) states that the size of bank is negatively related and significant to bank profits. The finding states that there is higher profitability from the small UK banks compared to larger ones for the year 1998. It has an inverse relationship which suggested that larger banks tend to earn lesser profits. In Kosmidou, Pasiouras, Tsaklanganos (2006) research, they focused on the profits of Greek banks operating abroad whereby they took 19 Greek bank subsidiaries which is currently operating in 11 countries from the period of 1995 to 2001. The study also shows that the size of the bank subsidiary is significant and negatively related to the profits of Greek bank abroad. As for the case of examination in domestic and foreign banks, the research indicates a negative coefficient (Kosmidou and Pasiouras, 2006).

There is a negative and statistically significant between the bank size and bank performance whereby net interest margin was used as measurement for the dependant variable (Kasman, 2010). This may be due to increased in volume of loans that will reduce the units. The statement was supported by the findings of Hawtrey and Liang (2008). The non-linear relationship between the bank size and bank profit indicated the significant level at 10 percent and negative coefficient of size. This might be because of managerial inefficiencies and bureaucratic problem when the bank is getting too big (Flamini, McDonald and Schumacher, 2009).

On the other hand, Micco et al. (2007) find no correlation between the relative bank size and the ROAA for banks, example the coefficient is always positive but never statistically significant. They find no correlation between absolute bank size (LTA) and ROA for banks located in developing countries, but a negative and

statistically significant correlation for banks located in industrial countries; these results are robust to dropping the asset share variable. The coefficients of relative size (SHTA) are always positive but never statistically significant. Goddard, Molyneux and Wilson (2004) on the other hand came into conclusion whereby the evidences for any consistent or systematic relationship found between size and profitability is not convincing enough except for some estimations where there is a significant relationship shown towards it. Ramadan, Kilani and Kaddumi (2011) investigated with 100 observations of 10 banks in Jordanian for the period 2001-2010 and find no statistically significant effect between the dependent variable and bank size.

All in all, the bank size is positively and negatively related, significant and insignificant to the bank performance. There is a mixed result as it depends on how the researchers had tested. When the result shows a positive and significant relationship, mostly it is due to larger size of banks are benefit from the economies of scale. Also, there are some researches that find no correlation between the bank size and return on asset or the result found can hardly be convinced.

2.1.2.5 Asset Quality

From the research of Olweny and Shipho (2011) argues that a good measure of credit risk or asset quality is the ratio of loan loss reserve to gross loans because it captures the expectation of management which is related to the performance of loans. Based on Kyriaki Kosmidou (2008), he had used a linear regression model on Greece 23 commercial banks data for the year 1990 to

2002, using ROA and the ratio of loan loss reserve to gross loans to proxy profitability and asset quality, but the result showed there is a negative significant impact of asset quality to bank profitability. Besides that, the results from Olweny and Shipho for asset quality showed a negative effect of -0.048, statistically significant 1% level, meaning a 1% increase in the asset quality ratio will lead to 0.048% reduction in the profitability. The effect will be the same in the sample of small, medium and large bank.

Based on the researchers Deborah J. Lucas and Robert L. McDonald (1992), banks know more about the quality of their assets rather than outside investors. This informational can distort investment decisions if the bank raise the funds from uninformed outsider. The researchers had model the effect of asymmetric information about loan quality on assets and liability decisions of banks and the market valuation of bank liabilities. Both regulatory and environment and the information structure can become the precautionary demand for those riskless securities against future liquidity need. If banks have partial knowledge of loan quality, however, high quality banks may hold more riskless securities to signal their quality so that enabling them to issue risky debt at a lower interest rate.

According to George A. Akerlof (2002, June) there is an empirical evidence that banks with higher asset quality do in fact will hold more cash and securities because asset quality can distort financing and real investment decisions. Bank appears to be particularly vulnerable to information problems because the private information is often revealed in lending process. Private information can make it costly for banks with high quality loans to sell risky assets in the secondary market or to borrow against the value of their risky

assets in order to meet deposit withdrawals. Besides, bank incentives differ from those of most other firms because of banks receive non-risk based deposit insurance which can gives them an incentive to maximize asset risk. Based on researcher Saidov Elyor (2009) an optimal loan to deposit ratio must have the objectives to increasing asset quality, long run corporate growth and facilitation of the monetary transmission mechanism. There are four primary responsibilities in the asset quality area which can help the managers and directors of the banks, there are adopt effective policies before loans are made, enforce those policies as the loans are made, monitors the portfolio after the loans are made and lastly is maintain an adequate allowance for loan and lease losses.

Ali Anari, James Kolari, Joseph Mason (2005), according to the bankruptcy law, the receivers were not imbued with any responsibility for resuscitating the bank by managing the liquidation of its assets and appropriate distributing funds from that liquidation of creditors. Trustees responsible for voluntary liquidations were only the efficient liquidation of the bank. The best assets usually presented for sale to larger banks when the banks was liquidated. For example, when systemic crisis in Albania's banking sector remain limited in the short term and thus expect to see a marked deterioration in asset quality and profitability during the financial crisis of 1997.

Researchers Kosmidou, Pasiouras, Zopounidis and Doumpos (2004) state that the loan loss provisions to total assets ratio is an indicator of the bank's asset quality, which shows how much a bank is provisioning in a given year relative to its total assets. Since provisions depend on the probability of loans to become non-performing, higher provisions indicate higher probability of non-

performing ratios. Therefore, lower values of this ratio are more desirable in order for better asset quality.

Kyriaki Kosmidou and Constantin Zopounidis (2008) had done a research by using ROA and the ratio of loan loss reserve to gross loans to proxy profitability and asset quality respectively. The results showed a negative significant impact of asset quality to bank profitability. This was in line with the theory that increased exposure to credit risk is normally associated with decreased firm profitability. Indicating that banks would improve profitability by improving screening and monitoring of credit risk.

According to Gerard Caprio, Jr (1998) research said that capital, asset quality , management, earnings and liquidity can be compared using similar criteria on how the individual banks can measure and compare for all the banks in a country rather than how the country's requirements and overall environment. Asset quality is defined as non performing loans when the number of days till a loan becomes nonperforming. Management quality is the most difficult to compare but if the country with more assets in foreign banks, they can have a better managed of assets.

In conclusion, the researchers expect banking sector asset growth and quality to deteriorate and expect the system to remain fundamentally stable with the low systemic crisis. The banks should increase the asset quality in order to provide an additional degree of protection over all loan quality deteriorate.

2.1.3 Macroeconomic Variables

Besides internal determinants, bank performances were also affected by the external determinant. The first external determinant for bank profitability is risk. Abreu and Mendes (2002), who examined banks in Portugal, Spain, France and Germany, find that the loans-to-assets ratio, as a proxy for risk, has a positive impact on the profitability of a bank. Bourke (1989) and Molyneux and Thornton (1992), among others, find a negative and significant relationship between the level of risk and profitability. This result might reflect the fact that financial institutions that are exposed to high-risk loans also have a higher accumulation of unpaid loans. These loan losses lower the returns of the affected banks.

The study of Molyneux and Thorton (1992) is one of the first that examines the determinants of banks profitability in several countries. The results indicate a positive association between the return on equity and the level of interest rates, bank concentration and the government ownership.

The unemployment rate has a negative sign in all regressions and is significant in the case of profits although not on net interest margins measures. Staikouras and Wood (2003) examine the performance of a sample of banks operating in thirteen Europe banking markets. Authors also find that the funds gap ratio is also significant and positively related to performance. Two of the three macroeconomic indicators, the variability of interest rates and the growth of GDP had a negative impact, while the level of interest rates had a positive effect.

Goddard et al. (2004) investigate the determinants of profitability in Denmark, France, Germany, Italy, Spain and the UK, for the period 1992–1998. They find only weak evidence for any consistent or systematic size–profitability relationship and a positive relationship between capital-assets

ratio and profitability. They investigated banks that have high capital ratio tend to record relatively low profitability.

Based on Micco et al (2007), non-interest income is not correlated with ROA in the subsample of developing countries but is positively correlated with this variable in the subsample of industrial countries; the opposite is true for the ratio of demand deposits to total deposits. These findings suggest that retail banks tend to be more profitable in developing countries and that banks that have high non-interest income (possibly wholesale/investment banks) tend to be more profitable in industrial countries.

For Croatia from 1995 to 2000, Jemric and Vujcic (2002) use data envelopment analysis (DEA) and find that foreign banks and new banks are more efficient. Yildirim and Philippatos (2002) estimate efficiency with both SFA and the distribution free approach using data from 12 transition countries from 1993 to 2000; compared with our eleven countries, these include Russia and Macedonia but exclude Bulgaria. These authors find that foreign majority owned banks are more cost efficient but less profit efficient than other banks in these transition countries.

According to Bonin, Hasan and Wachtel (2004) find that foreign-owned banks use modern technology from and rely on the human capital of their parent banks will perform better than government-owned or domestic private banks in transition countries. In addition, private banks should perform better than government-owned banks. Besides, the coefficient of the log of assets in all the regressions is negative and highly significant indicating that smaller banks are more efficient in these transition countries. In contrast, they find that larger banks have higher returns.

Prepayment risk is also one of the factors affecting the bank performance whereby the expectation on loan quality to experience market deterioration as the economic downturn will cause the ability of private sector to meet their debt repayment obligations. According to the researchers Frantantoni and Schuh (2008) said that they think prepayment risk is more important to a bank than a default risk because for an example the prepayment risk will significantly affect the performance of NASDAQ trade bank and also the return on loans and profit margin which will directly affected by the prepayment risk. The effects of prepayment risk on banking operations maybe in different interest rate, when interest rate is rise, prepayment risk is mainly displayed through a put options while the prepayment risk will become a call options when interest rate decline.

2.2 Review of Relevant Theoretical Models

The dependent variable and determinants of profitability and theories used in this paper are those normally concerned in banking researches and literatures.

2.2.1 Dependent Variable

Many researchers typically focused on ROA as the dependent variable in measuring profitability and performance of banks. Dietrich & Wanzenried (2011) focused on ROA as main measure of bank profitability; ROE as alternative profitability measures to evaluate the profitability of commercial banks in Switzerland over the period from 1999 to 2009. The authors found out there is significant the total loan and operational efficiency with ROA. Besides, Pasiouras & Kosmidou (2007) focused ROA as dependent variable and found out profitability of banks in European Union countries is affected not only by bank's internal factors

like capital to asset ratio, banks size and operating expenses but also by financial market structure and macroeconomic conditions.

In addition, Guru, Staunton & Balashanmugam (2002) found that the efficiency in expenses-management is one of the most significant determinants to ROA of commercial banks in Malaysia. He stated that banks in Malaysia should focus on controlling the management of expenses in order to improve the performance of banks. He also found that liquidity risk has positive relationship with ROA in Malaysia as lower risk commonly get a lower return in financial theory as more asset in focus in investment sector instead of non-profitable sectors.

Another study to assess the financial performance of Islamic commercial banks in Saudi Arabia by Ahmed and Khababa (1999) employed a regression model to test the effect of business risk, market concentration and market size on the profitability of the banks. They use return on assets (ROA), return on equity (ROE) and earning per shares (EPS) as directly equals to profitability. Based on the results obtained from both time series and the pooled time series data, they concluded that business risk and the bank size were the main determinants of banks' profitability.

2.2.2 Sources of Independent Variable

The management adjustable determinants that have direct impact to bank revenue and cost which can retrieve from banks' financial statement will be analyzed. The management of asset and liability is related with the performance of banks.

2.2.2.1 Balance Sheet

Balance sheet is the statement that shows the financial condition of the company throughout the year. The main category to emphasize on this statement would be the capital to asset capital ratio, Liquidity condition, the bank size, as well as debt ratio. Hester and Zoellner (1966) were the researchers who focusing on profitability of banks. According to their research, they evaluate the relationship between performance of banks and its ratios directly from the financial statement of 300 banks in Kansas City and Connecticut, United States, for the period from 1956 to 1959. They found that the obvious result that the fluctuation of assets and liabilities could affect the profitability of banks. While all asset items had a significant positive relationship; the liability items were negatively related to profits.

Bourke, et al, (1990), found that there is interrelated between balance sheet items and the profitability of banks. As authors said, the asset and liability management is related to the balance sheets items. Asset management is talking about sufficient of certain level of liquidity assets and the management of asset which could bring profit to banks. AGU, C.C. (1992) said that "liability management is concerned with the decisions in relation to deposit mix, borrowing and capital which meet the dual objectives of minimizing funding costs and achieving a desired level of stability in available funds." Thus, asset-liability portfolio decisions would probably the key factors that influence the performance of banks. This management is controllable and they would classify as internal factors.

2.2.2.2 Profit and Loss (Income Statement)

Profit and loss statement management is directly deal with the banks' income and expenditure management of the banks. The main emphasis would be focused to areas such as managing interest rate sensitivity, margin, credit valuation, and allocation of expenses in term of non-interest sensitivity. Vong (1996) had evaluated that 80% of bank revenue in Malaysia is from interest income. Income statement is somehow one of the main key to estimate the profitability of banks. However, some researchers ignore the determinants in asset and liability portfolio management, and managing interest rates and margin. Among the researchers who have investigated the relationship between ratios in financial statement and bank profitability are Hester and Zoellner (1966), and Smirlock (1985).

Detragiache and Poonam Gupta (2004) compared the performance of domestic banks and long-developed group of foreign banks in Malaysia and they found that there is a huge difference between banks mainly active in Asia and foreign banks not specialized in Asia. The latter group performed better than the rest, maintaining higher profitability affecting by higher interest margins and lower non-performing loans. Foreign banks did not abandon the local market and government would support local banks instead of foreign banks. They proposed some of the important determinants like equity ratio, operating expenses and Asset Quality.

Other researchers, Barros, Ferreira and Williams (2006) found that local banks are focus more in loan management and they have higher levels of cost and profit efficiency. The efficiency estimates confirm previous findings of considerable variation in efficiencies,

both across countries and between local and foreign-owned banks. In other hand, Bonin, Hasan and Wachtel (2005) found that foreign-owned banks are more cost-efficient than other banks as they provide the better service and incurred higher non-interest expenses. However, among these researchers, they did not show any result whether foreign banks or local banks have better performance and profitability. Thus, our objective to find out the ratios would affect the performance of local banks and foreign based bank in Malaysia.

2.2.3 Empirical Model Review

According to Pasiouras and Kosmidou (2006), they have constructed a model to examine the bank's performance in 15 Europe countries over the period 1995 to 2001. He examined internal and external factors that affect the profitability of banks in European Union; the model has been developed as follows:

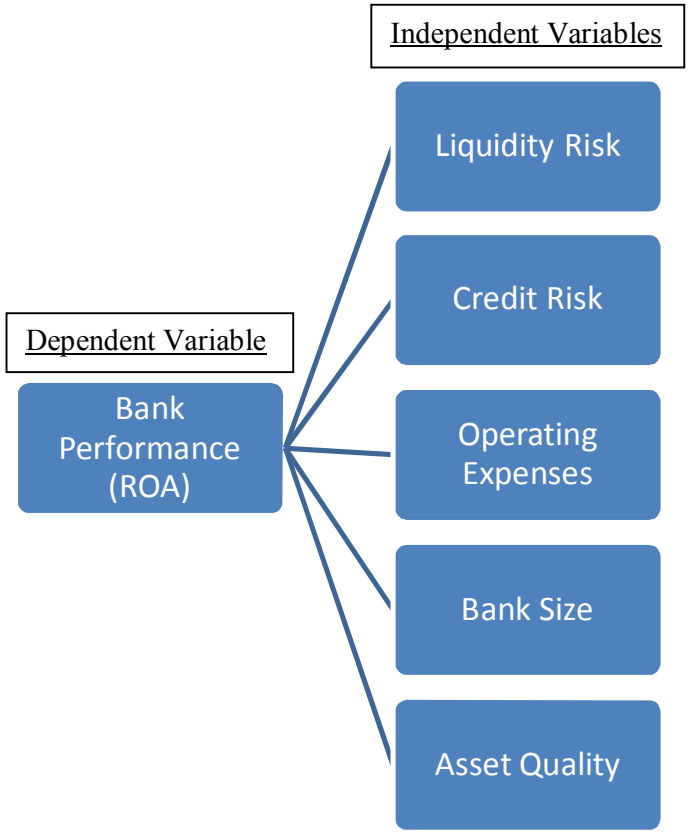
$$z_{it} = b_{0_{it}} + b_{m_{it}} Y_{m_{it}} + b_{d_{jt}} Y_{d_{jt}} + \epsilon$$

Where *I* refers to an individual bank; *t* refers to years; *j* refers to the country in which bank *i* operates; z_{it} the dependent variable that refers to the return on assets (ROA) and is the observation of a bank *i* in a particular year *t*; Y_m represents the internal factors of bank; Y_d represents the external factors of a bank; ϵ is an error term.

2.3 Proposed Theoretical Framework

As part of the standard terminology used in mathematics and statistics, "dependent variable" and "independent variable" are similar terms used with subtly different methods. Dependent variables are dependent towards independent variables. These methods are used to determine between two types of quantities being considered, which separates both at the start of a process or those being created by it.

The chart below showed the dependent variable and independent variables in this study:



ROA will be used to resemble the performance of bank which is our dependent variable in this study. The ROA is a valuable measure when comparing the profitability of one bank with another or with the commercial banking system as a

whole. A low rate might be the result of conservative lending and investment policies or excessive operating expenses. Apart from that, the independent variables we examine include bank size, capital ratio, liquidity risk, operating expenses, credit risk, asset quality, and debt ratio. We will be examining on how these independent variables will affect the performance of banks.

The size factor is considered as an internal variable because size-related decisions are beyond the control of management. The bank size is a measure of the size of a bank. According to Rasiah (2010), as far as banks are concerned, like other organizations, the management is quite distinct from the owners of the business. So the managements are not directly responsible for making size-related decisions. Therefore, the size factor would be considered as an external variable. This is particularly worthy of noting that the determinants of bank profitability were divided into internal determinants or management controllable factors and external determinants or factors beyond the control of management.

As for liquidity risk, it is a financial risk due to uncertain liquidity. The bank might lose liquidity if its credit rating falls, it experiences sudden unexpected cash outflows, or some other event causes counterparties to lending to the institution. A firm is also exposed to liquidity risk if markets on which it depends are subject to loss of liquidity.

Rasiah (2010) says that one of the principal activities of commercial banks in is to grant loan to borrowers. Loans are among the highest yielding assets a bank can add to its balance sheet, and they provide the largest portion of operating revenue. Hence, the banks are faced with liquidity risk since loans are advanced from funds deposited by customers. However, the higher the volumes of loans since loans are advanced from funds deposited by customers. However, the higher the volume of loans extended the higher the interest income and hence the profit potentials for the commercial banks. By then, the banks with a high volume of loans will also be faced with higher liquidity risk.

Other than that, the operating expenses as one of the independent variables are used to determine the bank performance because operating expenses include payroll, sales commissions, employee benefits, transportation, and depreciation, rent, and taxes. It is defined in the OECD Bank Bulletin (1987), as including all expenses relating to the ordinary and regular banking business other than interest expense, fee and commission expenses, provisions, income taxes and computer programming and equipment maintenance costs.

Also, another factor that will affect the bank performance is credit risk. It is the risk when one is unlikely to meet its credit obligations. Also, when one has 90 days past due on any credit obligation. Any of the loans or debts that have default might create an impact on the loans, securities and derivatives.

The asset quality of the banks is the measurement of the standard of bank's asset where by the quality of the bank's loan is the major concern of the bank since that provides earnings for the bank. Government bonds and T-bills are considered as good quality loans whereas junk bonds, corporate credits to low credit score firms etc. are bad quality loans. A bad quality loan has a higher probability of becoming a non-performing loan with no return.

2.4 Hypothesis Development

There are five independent variables that we stated and going to used to examine the performance/profitability of the local and foreign commercial banks based in Malaysia, for the ten-year period which starting from 2001 until 2010. The five independent variables are Liquidity Risk, Credit Risk, Operating Expenses, Bank Size, and Asset Quality. Following are the hypotheses:

2.4.1 Liquidity Risk

A bank should have the ability to fund the lending and investment commitments and deposit withdrawals and liability maturates. When a bank is having a high liquidity risk, it means that they are holding more illiquid assets on hand which will eventually bring the bank to the risk of bankruptcy if there are any sudden withdrawals. In order to have a high liquidity ratio, the banks has to forgo certain investment as opportunity costs. Researcher like Hempel et al, (1994), Kosmidou, Pasiouras and Tsaklanganos, (2006) claim that if a bank has a higher liquidity ratio the bank will then have a lower profit since it is less risky. While the other researcher, Kamau, (2009) suggested that a bank with high liquidity ratio even though has to forgo certain investments, they will gain a high return in the end. Therefore, we hypothesize that there is a relationship between liquidity risk and profitability of the banks.

H_0: *There is no significant relationship between liquidity risk and the profitability of bank.*
H_1: *There is a significant relationship between liquidity risk and the profitability of bank.*

The null hypotheses described that the liquidity risk and profitability of bank is not significantly related with each other while the alternative hypotheses described that there is a significant relationship between the liquidity risk and profitability of banks. We assumed that there is a relationship between both variables, hence, we rejected null hypothesis.

2.4.2 Credit Risk

Credit risk will lower the bank performance when an investor's risk of loss arising from a borrower who does not make the payments as promised or known as default. When a bank credit risk is high, the bank profitability will decrease and thus will lower down the bank performance as well. However, when a bank credit risk occurs, it is due to the investor losses in the factors of lost in principle and interest, decreased cash flow and the collection costs increased. Credit risk also can be defined as the default risk or counterparty risk. Besides, based on the researchers Naceur and Omran (2010), the research shows that the impact of credit risk is positively and significantly related to the profitability and thus will directly affect the bank performance. Moreover, Khalik found that the result of correlation coefficients sign between profitability of firm is expected to be a good credit risk and the entire loan collected must be positive.

H_0: *There is no significant relationship between credit risk and the profitability of bank.*
H_1: *There is a significant relationship between credit risk and the profitability of bank.*

Null hypotheses described that the credit risk has no significant relationship with the bank's performance while the alternative hypotheses described that the credit risk and profitability is significantly related to each other. We assumed that null hypotheses is not true, we rejected the null hypotheses indicating that there is a significant relationship between credit risk and the profitability of bank.

2.4.3 Operating Expenses

Generally, a bank's profitability will be affected when there is a high operating expenses incurred. When a bank operating costs is high, the bank profitability will decrease and the bank performance will be low. On the other side, if a bank operation costs is high due to the employment on professionals and more skillful people and technology, it will then increase a bank's profitability. Moreover, a high managerial efficiency will bring higher deposits rates to the bank which will increase the bank's performance. Thus, a bank's operating expenses is said to have direct relationship with the bank's profitability. It is also consistent with the research of Kasman, Tunc, Vardar and Okan (2010) and Sufian (2011). We hypothesize that the operating expenses is correlated to the bank's profit.

H_0: *There is no significant relationship between operating expenses and the profitability of bank.*
H_1: *There is a significant relationship between operating expenses and the profitability of bank.*

Null hypotheses described that the operating expenses has no significant relationship with the bank's performance while the alternative hypotheses described that the operating expenses and profitability is significantly related to each other. We assumed that null hypotheses is not true, we rejected the null hypotheses indicating that there is a significant relationship between operating expenses and the profitability of bank.

2.4.4 Bank Size

The size of the banks is accounted to economies or diseconomies of scale. A bank with a large size will eventually have better management and would require a lower profit as they charged lower interest rates to the borrowers. However, a large bank will tend to require higher profit via high lending rate and low deposit rate if it controls a big part of the share in the market in a non-competitive environment. As a result, there is a strong correlation relationship between the bank performance and bank size. The size of the banks will bring effects to the bank's profitability. This statement were supported by Tarawneh (2006), Pasiouras and Kosmidou (2007), Naceur and Goaied (2008). We hypothesize that there is a relationship between bank size and the profitability of bank.

H_0: *There is no significant relationship between bank size and the profitability of bank.*
H_1: *There is a significant relationship between bank size and the profitability of bank.*

Our null hypotheses described that there is no signification correlation between the size of the bank and the bank performances where the alternative hypotheses explained that there is a significant relationship between the bank size and bank's profitability. We assumed that the null hypotheses was not true, hence, we rejected it by supporting that there is a significant relationship between bank size and bank performance.

2.4.5 Asset Quality

Bank managers should concern with their asset quality or loans quality since it will provide earnings for the bank and will directly affect the bank

performance. When a bank asset quality is high, the bank profitability will increase and thus will increase the bank performance as well. However, when a bank asset quality is bad occur due to the junk bonds and corporate credits which have a higher probability of becoming a nonperforming loan with no return and thus will lower down the bank's profitability. Based on the researcher, Kosmidou (2008) had tested the ROA and ratio of loan loss reserve to gross loans to proxy profitability and asset quality using the linear regression model for commercial bank in the year 1990 to 2002, while the result they get shown that there is a negative significant impact of asset quality to bank profitability for all type of bank.

H_0: *There is no significant relationship between asset quality and the profitability of bank.*
H_1: *There is a significant relationship between asset quality and the profitability of bank.*

Null hypotheses described that the asset quality has no significant relationship with the bank's performance while the alternative hypotheses described that the asset quality and profitability is significantly related to each other. We assumed that null hypotheses is not true, we rejected the null hypotheses indicating that there is a significant relationship between asset quality and the profitability of bank.

2.4 Conclusion

The determinants of bank performance include of operating expenses, credit risk, liquidity risk, assets quality and bank size whereas return on assets is the measurement of the bank profitability. All this factors were commonly used in the past researches. In our literature review, it is stated that some factors have positive relationship towards the bank profitability where some of it has negative

relationship. The other external variables such as prepayment risk, modern technology and unemployment rate will directly have influences in the bank performances. The dependent variable in this research is return on assets where it is the division of net income to total assets. As for the sources of the variables, we obtained the data from the balance sheet and income statement of the bank selected. The model of our choice in this research is obtained from the reference of past researchers whereby return on assets will be the measurement of bank performances or bank profitability and the others five factors will be the independent variable in the equation. The developments of hypotheses were also being discussed in this chapter.

Overall, this chapter has covered the relevant theoretical models and other related literature review on the bank performances and financial ratios. At the same time, the proposed conceptual framework was formed by the relationship of dependent variables and independent variables. In particular, this study is ought to find out the bank performances of both local and foreign banks in Malaysia. The related hypotheses were stated and will be tested in Chapter 3 and Chapter 4 respectively.

CHAPTER 3: METHODLOGY

3.0 Introduction

In this chapter, we are going to show the research design, data collection methods, data sampling design, research instrument, constructs measurement, data processing, and data analysis. We are using secondary data to examine how the performance of local and foreign banks in Malaysia by using financial ratios.

The data that we used in this research we obtained from bank financial statement, past year thesis, newspaper, article and also journal that have been done by other researchers. All these journals were obtained from the Internet and also UTAR Online Databases.

3.1 Research Design

Research designs are the logical and systematic planning and directing a piece of research which concerned with turning the research question into testing projects. The best research design is that design that depends on your research questions and every design has its positive and negative sides and has been dealing with the problems such as what to study, what data are relevant, what data to collect, and how to analyze the best and good results.

Based on researcher, Colin Robson (1993) research design can be divided into fixed and flexible research designs. Others have referred to the distinction with quantitative research design and qualitative research designs. According to Prof. Hemant Kombraba, research design is form after the step of stating the

management problem, research purpose and research hypotheses and questions. In brief, research design is the blueprint of research; it is the specification of methods and procedures for acquiring the information needed for solving the problem. Questionnaires, forms and samples for investigation are decided while framing research design. Finally, the research design enables the researcher to arrive at certain meaningful conclusions at the end of the proposed study.

3.1.1 Quantitative Method

It is a method that we used to analyze data by using the range of mathematical and statistical techniques. First of all it is important to structure the information and indentify the overall patterns, and we need to examine the interrelationships between the variable whether they are correlated and how strong are them in order to analyze the quantitative data. However, there is a disadvantage of quantitative approach which the random selection is time consuming based on the researcher Duffy (1985). We are using the secondary data that we found on the local and foreign bank's latest annual report at the Bank Negara Library by given predetermined set of numerical data. The secondary data allocation makes our finding more reliable because the data that we found was the latest and reliable source.

3.1.2 Descriptive Research

Based on Anne E. Egger, and Anthony Carpi (2009) studies, descriptive research involves the systematic observation and cataloging of components of a natural system in a manner that can be utilized and replicated by other scientists. The objective of descriptive research is referring to the type of research question, design, and data analysis which applied in the research

project. For example, they can be tabulating the data in numerical form, such as scores on a test. Besides, description is commonly used as a research method to explain unique natural systems, large scale phenomena and past events. Descriptive research encompasses much government sponsored research including the population census, the collection of a wide range of social indicators and economic information.

A good description provokes the "why" questions of explanatory research. Researcher usually uses to organize data into pattern which will appear during the analysis because descriptive statistics are important to reduce the data to manageable form. The descriptive research can include multiple variables for analysis which unlike other methods that only requires one variable. The researchers are using the observation and survey method in order to collect the descriptive data. On the other hand, to measure the central tendency such as mean, mode, median, standard deviation, and correlation between variables, researchers can used survey research method.

3.1.3 Causal Research

Causal research explores the effect of one thing on another and more specifically, the effect of one variable on another by the DJS Research Ltd. The research is used to measure what impact a specific change will have on existing norms and allow market researcher to predict hypothetical scenarios that may be able to use the result to forecast the changes that made in future. The objective is to determine which variable might be causing a certain behaviors such as there is a cause and effect relationship between variables and causal research must be undertaken. The most social scientists seek causal explanations that reflect tests of the types of

hypotheses and the cause is the focus of some qualitative research and everyday conservations about causes.

In order to determine causality, it is important to hold the variable that is assumed to cause the change on other variable constant and measure the changes in the other variables. When dealing with people's attitudes and motivations, causal research is very complex and hard for the researcher to complete certain factors that influencing the causal relationship. In addition to minimization the bias and maximization the reliability, a research is required to use the hypothesis testing in order to test the accuracy of the data which has been collected (Joseph, 2008).

3.1.4 Panel Data

Panel data is defined as the data that was generated from a small number of observations which covering a large number of units. In statistics and economics, multi-dimensional data also known as the panel data which contained of observations on multiple phenomena observed over multiple time periods for the same firms or individuals. In biostatistics, the term longitudinal data is often used instead where a subject constitutes a panel. Moreover, based on Matyas, Laszlo, Sevestre and Patrick (2008), in panel data included time series and cross sectional data have become an increasingly popular way of quantifying economics relationships and which are special cases that are in one dimension only.

3.1.4.1 Time Series Data

There are same types of information collected on different sample or past records across multiple periods is using the time series

design to conduct the analysis. Time series data is a sequence of data points which is typically measured at successive time instant spaced at uniform time interval in statistics, signal processing and mathematical finance. Besides, time series analysis also comprises the methods for analyze time series data in order to extract meaningful statistics and other characteristics of the data. Times series are very frequently plotted with line charts. Moreover, according to the researcher Granger (1981), time series analysis has a rather different approach to the analysis of economic data because we need to more readily to looking at the data before specifying a model.

3.1.4.2 Cross Sectional Data

Doing this research we also used the cross sectional design, where this method are the data that we collected once from the information from any given sample of population. Cross sectional data refers to data collected by observing many subjects such as region, individual or countries at the same point of time and it is also consists of comparing the differences between the subjects. Cross sectional data also known as longitudinal data which differ from time series data, where one subject's changes over the course of time panel data by combining both and looks at multiple subjects, how they change over course of time.

3.2 Data Collection Methods

3.2.1 Data Sources

The data that were collected for this research is secondary data. Based on the researcher Steppingstones (2004), secondary data is information that we used to complete of a research project. Secondary data can be classified into internal and external. Internal is secondary data acquired within the organization when the research is carried out while the external secondary data is we obtained from outside sources such as bank financial statement, annual report, textbooks, journal, articles, past year thesis. Secondary data is those data that has already been gathered or published by other researchers, so it is faster to collect and less expensive compared with the primary data.

The data that we used in this research were obtained from the local and foreign bank annual reports. The annual reports were taken from 16 different banks including 8 foreign banks and 8 local banks based in Malaysia. The duration chosen for the research was from year 2001-2010, ten years. We had obtained the bank annual reports through the website of the banks and library of Bank Negara Malaysia. From the financial report, balance sheet statement, profit and loss statement and notes to account, we gather all the data and calculate the financial ratio in order to run the data in chapter 4, which is the most important thing in the research.

As for the journals gathered for the use of literature review, we had obtained the journals from the UTAR Online Library Database where there are several links subscribed by UTAR for the ease of student to search for the journals related.

3.2.2 Selection of Sample

This study focuses on the sixteen local and foreign commercial banks in Malaysia. The data for the analysis were of banks instead of group data. The bank data is selected because the main objective of this study is to evaluate the performance of local and foreign commercial banks in Malaysia.

3.3 Sampling Design

3.3.1 Target Population

In research, population is a precise group of people or objects that possesses the characteristic that is questioned in a study. To be able to clearly define the target population, the researcher must identify all the specific qualities that are common to all the people or objects in focus. The target population in this research is the conventional banks in Malaysia as the main purpose of this study is to examine the performance of local and foreign banks in Malaysia by using financial ratios. Malaysia has a population of 25 commercial banks, which 8 are local banks and 17 are foreign-owned banks. Therefore, in this study we chose a sample of 8 local and 8 foreign commercial banks. Table 3.1 shows the 8 local commercial banks and Table 3.2 shows the 8 foreign commercial banks that were used in this study.

3.3.2 Sampling Frame

Sampling frame is defined as a set of source materials from which the sample is selected. It encompasses the purpose of sampling frames, which is to provide a means for choosing the particular members of the target population that are to be interviewed in the survey (Turner, 2003). The sampling frame that we used in this research is Malaysian banks. We had divided it into two groups which are foreign and local banks mainly to find out the performance for both groups of banks.

3.3.3 Sampling Element

The unit of analysis or case in a population is known as sampling elements. It can be a ratio or performance that is being measure. It is the specific respondent within the whole sampling unit. In this research, the respondents are the banks. There are a few elements in this research which consists of the risk, operating expenses and profitability.

3.3.4 Sampling Technique

Simple Random Sampling in our research is implemented as we have divided our samples into two different groups which are the foreign and local banks. Few banks were randomly selected from both the groups.

3.3.5 Sampling Size

The sampling size in this research has a total of 16 banks include 8 foreign banks and 8 local banks for 10 years. Overall, there are 160 samples for

this research. This is due to the widely- used financial statements for 10 years for each selected banks. These banks were chosen to determine the impact of bank performances by using financial ratios.

3.4 Research Instruments

The data that obtained for this research is from internet and annual reports which only consists secondary data. So, there are no questionnaires are existed in this research. The data for this research were all obtained from the local and foreign banks' annual reports.

The study will be carried out using a few different statistical techniques in order for better and more accurate result. We are using e-view software to conduct the research. The activities involve in conducting the research which obtaining data from the annual report, analyzing the data, hypotheses testing, find out the results of the study and make overall conclusion of the study.

3.5 Data Analysis

There are five independent variables in our study which are liquidity risk, credit risk, operating expenses, bank size, and asset quality; while, the dependent variable in our study is return on assets. In this study, we extracted the data from the annual report of the banks. Then, we calculated all the financial ratios using the Microsoft Excel by arranging it according to the years, banks and variables. The numbers are easily processed due to the convenience and efficiency provided by the software. After computing the data from excel, we proceed by exporting it to E-View in order to examine the relationship between these independent variables with the dependent variable. We start our data analysis by using the

descriptive analysis which is the mean. Next, we used the correlation analysis which provides the degree and directions of those variables.

3.5.1 Descriptive Analysis

Descriptive analysis is a branch of statistics that denotes any of the many techniques used to summarize a set of data. This analysis shows the summary statistics of the data set for the bank performance for both foreign and local banks associated with the independent variables. It is used to measure the mean, median, maximum and minimum level, standard deviation, skewness and kurtosis.

3.5.2 Inferential analysis

3.5.2.1 Multiple Regressions

Multiple regressions is a flexible method of data analysis that may be appropriate whenever a quantitative variable is to be examined in relationship to any other factors (Berger, 2003). Relationships may be nonlinear, independent variables may be quantitative or qualitative, and once can examine the effects of a single variable or multiple variables with or without the effects of other variables taken into account (Cohen, Cohen, West & Aiken, 2003).

Multiple Regressions:

$$\mathbf{Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \epsilon}$$

Y = Return on Asset = *Net Income / Total Assets*

X_1 = Liquidity Risk = *Net loan / Deposit and short term funding*

X_2 = Credit Risk = *Loan Loss Provision / Net Interest Income*

X_3 = Operating Expenses = *Non Interest Expenses / Total Average Assets*

X_4 = Asset Quality = *Non Performing Loan / Gross Loan*

X_5 = Bank Size = *Log (Total Asset)*

Where Y is the Return on Asset and it is the dependent variable. Y is dependent on the other five independent variables such as X_1 is the ratio of net loan to deposit and short term funding which indicates the liquidity of the bank. X_2 is the loan loss provision to net interest income which indicates the bank's credit risk. X_3 is the non interest expenses to total average assets which indicate the operating expenses of the bank. The asset quality is X_4 which indicates the ratio of nonperforming loan to gross loan. Finally, X_5 which is the bank size by using the natural logarithm of total assets. All these independent variables are most likely the one to affect the bank profitability. With the use of multiple regression analysis, we are able to determine which independent variables will have a greater impact on the bank's performance.

3.5.2.2 Pearson Correlation Coefficient

Correlation is a measure of the relation between two or more variables. It is often used to describe the degree of relationship between the variables. In this case, Pearson correlation is used as it determines the extent to which values of the two variables are "proportional" to each other. The measurement scales can range from -1.00 to + 1.00. The value of -1 represents a perfect negative

correlation while a value of +1 represents a perfect positive correlation. A value of 0 represents a lack of correlation.

3.6 Conclusion

In order to test the significance of the results, descriptive analysis, multiple regression analysis and correlations analysis were used. All the data and information were gathered mainly via internet and the financial reports of the banks. Microsoft Excel is used to calculate financial ratio for the dependent and independent variables, and Econometric Views (EViews) is used for data analysis. This chapter provides a brief guide and knowledge of the relevant data as so to be used in our next chapter which is data analysis.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

In the previous chapter, that is the chapter 3 methodology, this study has determined the relevant data to be tested on this chapter to find out the significant relationships between the performance of banks and other independent variables, between local and foreign commercial banks in Malaysia, during the period of 2001 until 2010. The aim of this chapter is make decision to choose the most suitable methods to regress our data among all available methods in Econometric Views (EViews).

This chapter is divided into 2 sections. This first section provides the descriptive analysis of the data and variables for the study, which helps to measure the central tendency. Next, this study discusses the correlation analysis between performance of banks and each of the independent variables.

4.1 Descriptive Analysis

Descriptive analysis is used to explain the basic features of the data in this research. This set of descriptive analysis showed the various summary statistics for the return on assets for both local and foreign commercial banks associated with the independent variables that are liquidity risk, credit risk, operating expenses, bank size, and asset quality. Descriptive analysis can be used throughout the data analysis in a number of different ways. This study starts off with trend analysis, which shown the movement of the return on assets of local and foreign commercial banks in Malaysia during this ten-year period respectively.

Next, this study tests on the relationship of the independent variables with the dependent variable. Then, dependent and independent variables comparison between local and foreign banks is carry out, where this study uses mean as the basic measurement to measure their relationship. Lastly, model summary, where this study examines on the effect of the independent variables chosen to the dependent variable.

4.1.1 Trend Analysis

Figure 4.1: Trend Analysis of ROA of Malaysian Local Commercial Banks

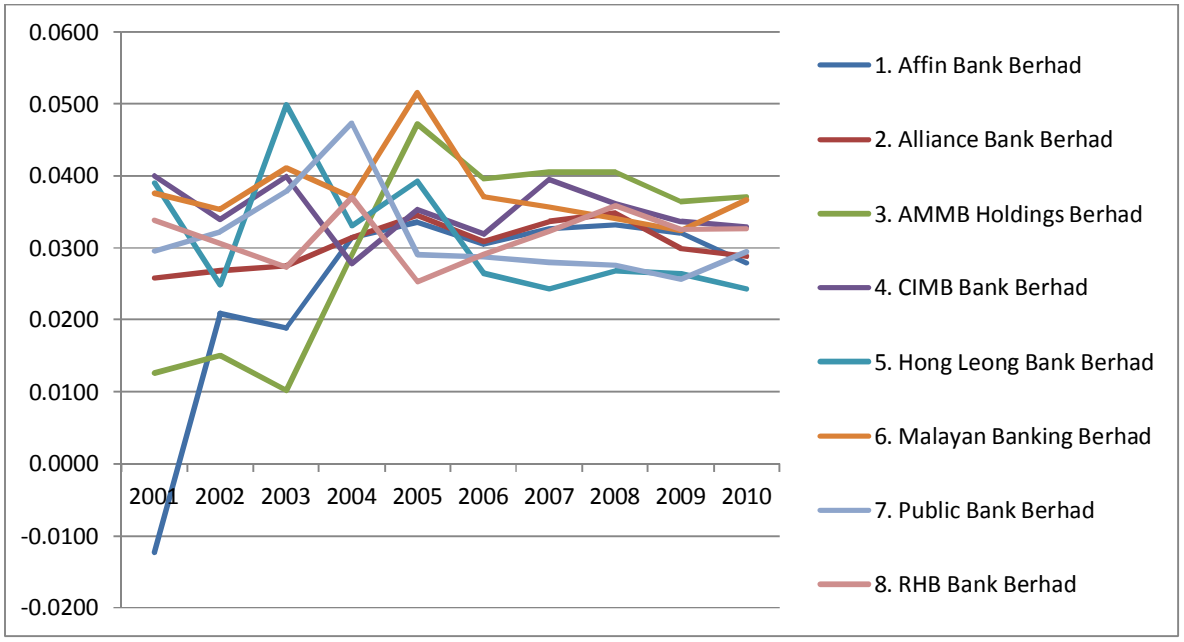


Figure 4.1 shows the movements of ROA level of the eight local commercial banks in Malaysia, across the ten-year period of beginning 2001 until 2010. The ROA level has been fluctuating over the period. The local bank which records the highest ROA level (0.0515) as of 2005 Malayan Banking Berhad, while the bank which records the lowest ROA level (-0.0123) as of 2001 Affin Bank Berhad. *(Refer to Appendix 4.1)* The negative figure of Affin Bank Berhad is due to few

reasons, fluctuation in stock price, increase in liability and expenses, and decrease in assets and income.

Figure 4.2: Trend Analysis of ROA of Malaysian Foreign Commercial Banks

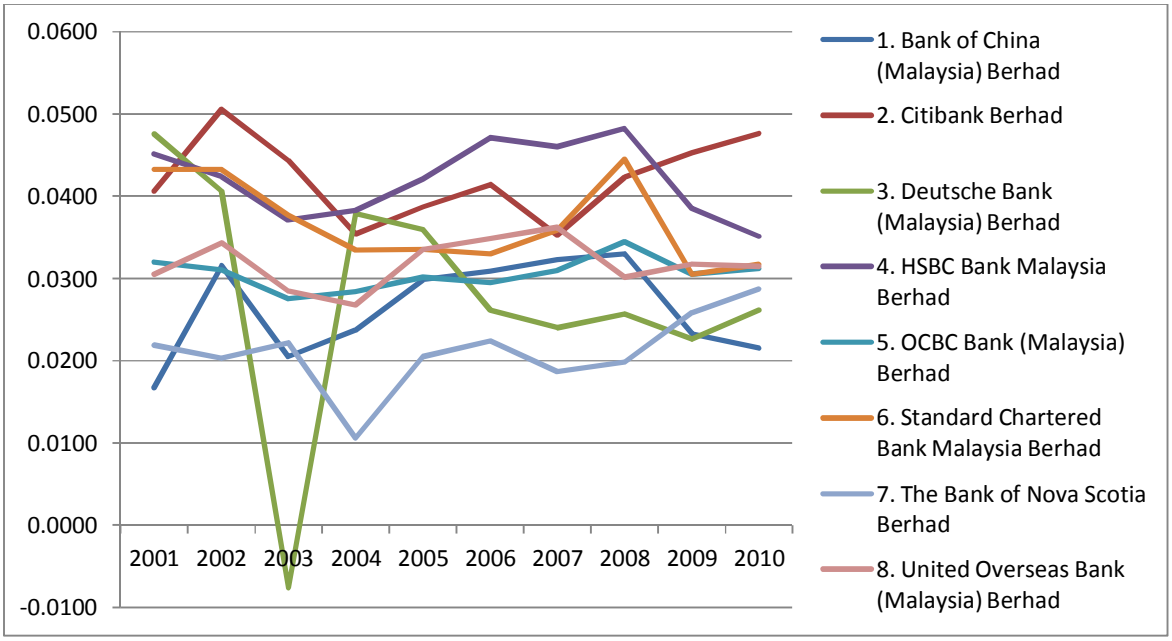


Figure 4.2 shows the movements of ROA level of the eight foreign commercial banks based in Malaysia, across the ten-year period of beginning 2001 until 2010. The ROA level has also been fluctuating over the period in foreign banks. The foreign bank which records the highest ROA level (0.0506) as of 2002 Citibank Berhad, while the foreign bank which records the lowest ROA (-0.0076) as of 2003 Deutsche Bank (Malaysia) Berhad. *(Refer to Appendix 4.2)* One of the reasons that cause Deutsche Bank (Malaysia) Berhad's ROA drop tremendously is the decrement in earnings generated in that particular year.

4.1.2 Descriptive Analysis for the Dependent and Independent Variables

Table 4.1: Descriptive Analysis for the Dependent and Independent Variables

COMBINE	N	Coefficient	Std. Error	t-Statistic
LIQ	160	0.000240	0.000269	0.893055
CRE	160	-0.003241	0.001399	-2.316541**
OPE	160	0.937678	0.139067	6.742619***
SIZE	160	0.001320	0.000368	3.590496***
ASS	160	-0.046175	0.018998	-2.430506**

***. Correlation is significant at the 0.01 level.

**. Correlation is significant at the 0.05 level.

*. Correlation is significant at the 0.10 level.

In this research, it has used the EViews software to help to analyze the data that were obtained from the financial reports of the banks. The descriptive statistics explores and presents an overview of all variables used in the analysis. This research has a total of 160 observations which consists of 10 years annual reports of 16 different local commercial banks and foreign-owned commercial banks based in Malaysia, for the period 2001-2010. Based on the table above, we can see that most of the ratios that we used in this research are related to our dependent variable which is ROA (Return on Assets).

Based on the regression results in Table 4.1, the multiple regression equation of this study can be written as following:

$$\mathbf{Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + \epsilon}$$

Return on Assets = -0.008700 + 0.000240 LIQ + (-0.003241) CRE + 0.937678 OPE + 0.001320 SIZE + (-0.046175) ASS + ϵ

The intercept of b_0 equal to -0.0087 specify that when independent variables which are liquidity risk, credit risk, operating expenses, bank size, and asset quality equal to zero, the return on assets of the banks will decrease by 0.0087 units.

H_0: There is no significant relationship between liquidity risk and the profitability of bank.

H_1: There is a significant relationship between liquidity risk and the profitability of bank.

Firstly, there is insignificant relationship between the ROA and LIQ (liquidity risk) with the t-value = 0.893055, it has a coefficient estimate of 0.000240. When LIQ increases by 1 unit, the ROA will also increase by 0.000240 units. So, any movements in the LIQ would not affect the ROA.

The ratio of net loans to deposit and short term funding is used in this study as a measure of liquidity. Based on Bourke (1989) and Kosmidou and Pasiouras (2005), they found a significant positive relationship between liquidity and bank profits. The ratio shows the relationship between comparatively illiquid assets (i.e. loans) and comparatively stable funding sources (i.e. deposits and other short term funding). A positive effect indicates that the ability of banks to better manage liquidity. Therefore, the lower the value of this ratio, the more liquid the bank is. Since liquid assets are associated with lower rates of return, a positive relationship is expected between this variable and performance.

H_0: There is no significant relationship between credit risk and the profitability of bank.

H_1: There is a significant relationship between credit risk and the profitability of bank.

Next, the CRE (credit risk) has a significant negative relationship with ROA with the t-value = -2.316541, it has coefficient estimate of -0.003241. When CRE increases by 1 unit then the ROA will decrease by 0.003241 units. When the CRE increases, it will affect the ROA of banks to decrease. The relationship between these two components has a 95% confidence level.

We measure credit risk using the ratio of loan loss provision to net interest revenue in order to capture the relationship of credit risk and bank profitability. For the credit risk, theory suggests that increased exposure to credit risk is normally associated with decreased firm profitability and, hence, we expect a negative relationship between ROA and credit risk. Bank managers use loan loss provision to manage earnings. When higher amount of loan loss reserve is put aside, expected future losses on non-performing loans increases, hence, lower the banks' profitability. In addition, Miller and Noulas (1997) point out that credit risk should unleash a negative impact on profitability since the higher the level of high-risk loans, the higher the level of unpaid loans, the lower a bank's earnings.

As a result, we can reject null hypothesis and conclude that credit risk has significant relationship with profitability of bank.

H_0: There is no significant relationship between operating expenses and the profitability of bank.

H_1: There is a significant relationship between operating expenses and the profitability of bank.

Based on the table above, there is a 99% confidence level that shows that the OPE (operating expenses) has positive and significant relationship with ROA with the t-value = 6.742619, it has coefficient estimate of 0.937678. OPE increases by 1 unit then the ROA increases by 0.937678 units. This shows that whenever there is a movement in the OPE, it will bring any effect to the ROA.

To capture the relationship between operating expenses and bank profitability, operating expenses is calculated by using the non-interest expenses divided by average assets. Empirical evidence from Athanasoglou *et al.* (2005: 23, 25) shows that labor productivity growth has a positive and significant effect on bank profitability. This suggests that higher productivity growth generates income that is partly channeled to bank profits. Banks target high levels of labor productivity growth through various strategies that include keeping the labor force steady, ensuring higher quality of newly hired labor, reducing the total number of employees, and increasing overall output via increased investment in fixed assets which incorporate new technology. The positive and significant coefficient between OPE and ROA indicates that the bank is competence in its expenses managements. In addition, positive coefficients could also indicate that banks are able to pass on most of the high overhead costs to depositors and borrowers in terms of lower deposit rates and/or larger lending assets in order to keep profits unaffected.

As a result, we can reject null hypothesis and conclude that operating expenses has significant relationship with profitability of bank.

H_0: There is no significant relationship between bank size and the profitability of bank.

H_1: There is a significant relationship between bank size and the profitability of bank.

The fifth independent variable involved in this study is the bank size. There is a 90% confidence level that shows SIZE (bank size) has positive relationships with ROA, with the t-value = 3.590496, it has coefficient estimate of 0.001320. When the SIZE increases by 1 unit, then the ROA will increase by 0.001320 units. This shows that whenever there is a movement in the SIZE, it will bring any effect to the ROA.

To capture the relationship between size and bank profitability, bank size is calculated by using the logarithm of total assets of individual banks. Molyneux and Thornton (1992), Bikker and Hu (2002) and Goddard et al. (2004), Akhavein et al. (1997), all find size to be positively related to profitability. Generally, the effect of a growing size on profitability has been proven to be positive. If the relative size of a firm expands, its market power and profits increases, as the banks could achieve the economies of scales when bank's size is large. Besides that, in the recent studies by Emery (1971), Mullineaux (1978), Rhoades and Savage (1991) found that the relationship between size and profitability was positive. This finding suggests that the larger the size of the bank can easily meet their rigid capitals so that they can have extra funds for giving loans to borrowers and thereby increase their profits and earning levels.

As a result, we can reject null hypothesis and conclude that bank size has significant relationship with profitability of bank.

H_0: There is no significant relationship between asset quality and the profitability of bank.

H_1: There is a significant relationship between asset quality and the profitability of bank.

ASS (asset quality) also has a significant negative relationship with ROA at 5% significant level, with the t-value = -2.430506, it has coefficient estimate of -0.046175. As an increase in the ASS by 1 unit, it will lead to decrease in ROA by 0.046175 units. When the ASS increases, it will bring a negative effect on the ASS.

To capture the relationship between asset quality and bank profitability, asset quality is calculated by using the ratio of non-performing loan to gross loans. The results showed a negative significant impact of asset quality to bank profitability. As discussed in the literature, asset quality is reflected in the ratio. Though banks tend to be more profitable when they are able to undertake more lending activities, yet due to the asset quality of lending portfolios is compromised a higher level of reserve is needed. Such a high level of reserve against gross loans in fact depresses banks' return on assets significantly.

As a result, we can reject null hypothesis and conclude that asset quality has significant relationship with profitability of bank.

4.1.3 Dependent and Independent Variables Comparison

Based on the table above, it shows that the ROA can be affected by many factors in the banks' financial system. The relationships between the all the components tested above are one of the main factor why this test needs to be conducted. This test helps to show the relationships among the components and so that it will be easier to understand how an increment in one of the component will lead to an

increment or decrement of another component. It is important to find out about the relationships as these relationships are the ones that will help to determine which component will have effect on the ROA. This would definitely help the banks in Malaysia to know better about the components in their financial system that can majorly affect the ROA. ROA is the dependent variable in our research and therefore, it is the main component that is being tested so that the research can determine whether liquidity risk, credit risk, capital, operating expenses, bank size, debt ratio and asset quality will affect the profitability of banks, hence, performance of banks. The ROA is primarily an indicator of managerial efficiency. It indicates how capable the management of the bank has been in converting the institution's assets into net earnings. The ROA is a valuable measure when comparing the profitability of one bank with another or with the commercial banking system as a whole. The following tables show the mean for each independent and dependent variables in comparison between local and foreign commercial banks in Malaysia for the ten-year period beginning from 2001 until 2010.

Table 4.2: Mean Value for the Dependent and Independent Variable for Local Banks

LOCAL BANKS					
ROA	**LIQ**	**CRE**	**OPE**	**SIZE**	**ASS**
0.031713	3.878865	1.328186	0.015179	24.72274	0.061373

Table 4.3: Mean Value for the Dependent and Independent Variable for Foreign Banks

FOREIGN BANKS					
ROA	**LIQ**	**CRE**	**OPE**	**SIZE**	**ASS**
0.032314	3.110825	0.898199	0.014636	22.95714	0.023774

4.1.3.1 Liquidity Risk

The first bank profitability variable, we found that there's insignificant positive relationship between ROA and LIQ. LIQ doesn't affect ROA directly. A bank with high amount of loans doesn't indicate that the bank will perform well. We believe that liquidity could be also partially captured by comparatively liquid deposits available in a bank. In comparison between local and foreign banks, foreign banks hold more deposits and funds than local banks, thus, foreign banks contribute a higher amount of return on assets than local bank. In addition, as modeled by Freixas and Holthausen (2004), large scale penetration of foreign banks influences the choice of liquidity position of the banks as they can reshuffle reserves among the parent institution and subsidiaries located in different countries. Foreign banks can also refinance in a country whose refinancing interest rate is at lowest. Hence, foreign banks can choose to hold less liquid assets than local banks in Malaysia. In comparison, local banks are having higher liquidity risk than foreign banks. Thus, it contributes a lower ROA. However, based on the results regressed in correlation analysis, LIQ (liquidity risk) does have positive effect on CRE (credit risk) and ASS (asset quality). For example, in order for banks to expand in a market which is already saturated, they will include low quality loans in their portfolio. However, low quality loans will cause high levels of non-performing loan. Hence, it will lead to higher loan loss provision, which shown in the correlation result, whereby there's a correlation between LIQ

and ASS that amount to 0.391788 and 0.363552 respectively. Therefore, conclusion about the impact of liquidity risk on banks' performance remains ambiguous and further research is required.

4.1.3.2 Credit Risk

Based on our result, a 1 unit change in CRE will entails about -0.003155 unit changes in ROA. This shows that a rise in loan loss provisions as a slightly distress at the profitability of the banks. Comparing between local and foreign banks, local banks have higher mean of CRE (credit risk) of 1.328186, which results a lower ROA of 0.031713. While, for foreign banks, it has lower average mean of CRE of 0.898199, constitute a higher ROA of 0.032314, compared to local banks. From the results, we can tell that local banks have been involved in higher amount of high-risk loans, problematic loans, or lower quality bank loans, as compared to foreign banks. Local banks that chose to engage in high risk loans is mainly due to the competition with foreign banks. By holding higher risk loans also signify that local banks have bigger barriers in maximizing its profit, thus, the performance or profitability of foreign banks is better than local banks.

4.1.3.3 Operating Expenses

From our findings, a 1 unit change in OPE will entails about 0.937678 unit change in ROA. Comparing between local and foreign banks, local banks have higher mean of OPE (operating expenses) of 0.015179**,** which results a lower ROA of 0.031713. While, for foreign banks, it has lower mean of OPE of 0.014636, constitute a higher ROA of 0.032314, compared to local banks. The higher return on assets of foreign banks any indicates that foreign banks are more cost efficient than commercial banks. It might due to the reason that the usage of new electronic and professional training by foreign banks. In a developing countries like

Malaysia, foreign banks' technological edge is relatively strong, it has enable the banks to overcome any informational disadvantage as well lower its wage expenses. Thus, it has lead to a better performance of foreign banks. In order for local banks to catch up with the efficiency provided by foreign banks and compete with foreign banks, some not technologically developed local banks may invest heavily on technology, thus it leads to an increase in their costs. Secondly, relatively high operating expenses occurred in local banks can be explained by the survey on bankers in Malaysian local banks, which indicates that lack of knowledgeable bankers in selecting, evaluating and managing profitable project might cause the banks' operating expenses to be high yet contribute low return on assets. Although the initial result shown a positive relationship between OPE and ROA, yet there's inverse relationship shown in comparing the mean of local and foreign banks because the differences between local and foreign banks is 0.0543%, which is very small and the effect might be affected by other variables. In addition, inefficiencies in local banks' managing loan portfolios might leads to higher non-performing loans, as shown in results above, as compared to foreign banks, which have better management in loans' evaluation. Efficient in management leads to higher credit ratings for the approved loans and lower probability of default resulting in lower non-performing loans.

4.1.3.4 Bank Size

Moving to bank size, we have achieved the positive relationship between size and profitability of banks. Based on our result, a 1 unit change in SIZE will entails about 0.001320 unit change in ROA. However, the test result is inconsistent when we compare local with foreign banks. Local bank ROA (0.031713) is relatively lower than foreign bank's ROA (0.032314), even though the size of the local banks (24.72274) is bigger than foreign banks (22.95714). Higher amount of SIZE of local banks indicates that local banks have a greater proportion of the domestic market. On the other hand, banks might compromise the quality of their loan

portfolio in exchange for better market share in a highly competitive and saturated domestic market. This can be seen in the local bank ASS ratio, whereby they suffer from higher ASS ratio which suggested a higher non performance loan and lower quality loan portfolio. Thus, bank size must not be solely used to determine the bank's ROA but interpret together with other variables such CRE and ASS.

4.1.3.5 Asset Quality

In the case of asset quality, we have achieved the negative relationship between asset quality and profitability of banks. Based on our result, a 1 unit change in ASS will entails about -0.046175 unit change in ROA. In comparison, local banks generally suffer from poor asset quality. The mean of asset quality for the local banks is 0.061373 compared to foreign banks' asset quality mean which only 0.023774. With the entrance and presence of foreign banks in Malaysian financial sectors, it has caused local banks operate in more risky environments, in terms of their earnings and managements. Foreign banks offer most talented bank officials a better career prospect has attracted most of the expert to their banks. Lack of the expertise and experience to control their lending operations in local banks, it will probably result in a higher value in denominator which is non-performing loan. In addition, local banks want to generate high earnings from their assets, in consequences, high risk of their loans, low quality of loans and low creditworthy borrowers, hence, high probability of non-performing loans if these borrowers fault on their loans. On the other hand, foreign banks usually deal with customers with high creditworthiness which explained their low non-performing loans. It enables foreign banks to utilize the opportunity cost to do investing fund, hence, results a better performance of the banks. In conclusion, the ASS ratio is expected to have a negative relationship with profitability.

4.1.4 Model Summary

Table 4.4: Summary of Analysis (ROA)

Model	R	R-Square	Adjusted R Squared	F-statistic	P-value
1	0.587034	0.344609	0.325395	16.33870	0.000000

a. Predictors: (Constant), Liquidity Risk ratio, Credit Risk ratio, Operating Expenses ratio, Bank Size ratio, Asset Quality ratio.
b. Dependent Variable: Return on Assets

In the model, the coefficient R is 58.7%. We explained by cumulative effect of the five independent variables employed in this study: Liquidity Risk ratio, Credit Risk ratio, Operating Expenses ratio, Bank Size, and Asset Quality ratio. From these findings, it is clear that there is a significant positive relationship between five independent variables and Return on Assets of commercial banks in Malaysia. The remaining 41.3% of changes will be identified by other factors which are not tested in the model.

R square (R^2) is the coefficient of multiple determinants which indicates the proportion of total variation in the dependent variable explained by all independent variables, in order to evaluate model fit. The R square in this model is 0.344609 which indicates that 34.46% of the variation in Return on Assets explained by the liquidity risk, credit risk, operating expenses, bank size and asset quality. The rest 65.54% remains unexplained by this model. In general, the higher the value of R square (R^2), the better the model fits with the data. The adjusted R square is used when comparing models as it takes into account the sample size and the number of degree of freedom when adding a new variable into the model. The adjusted R square in this model is 0.325395 indicates that 32.54% of the variation in Return on Assets explained by liquidity risk, credit risk,

operating expenses, bank size and asset quality when adding a new variable to the model. Therefore, 67.46% of the variation in Return on Assets could not be captured by the model and will be explained by other determinants.

The value of F-test in this model is 16.33870 indicates that the F test is low. But the p-value is 0.000000 which is less than 0.05 (5% level of significant) indicates that there is at least one independent variable influence the Return on Assets in banking industry. As the result, we reject null hypothesis and can conclude that Return on Assets have significant relationship with Liquidity Risk, Credit Risk, Operating Expenses, Bank Size, and Asset Quality.

4.2 Correlation Analysis

4.2.1 Correlation Analysis between ROA and all ratios

Table 4.5: Correlation between ROA and all ratios

COMBINE	ROA	CRE	LIQ	OPE	SIZE	ASS
ROA	1.000000					
CRE	-0.172844**	1.000000				
LIQ	0.035756	0.391788	1.000000			
OPE	0.400647***	0.298411	0.158091	1.000000		
SIZE	0.269999***	0.156152	0.261319	0.136354	1.000000	
ASS	-0.243465**	0.694940	0.363552	0.176904	0.094719	1.000000

***. Correlation is significant at the 0.01 level.

**. Correlation is significant at the 0.05 level.

*. Correlation is significant at the 0.10 level.

The correlation table 4.5 above shows the matrix of all the possible correlations among the four variables that are listed in rows as well as in the columns. Pearson Correlation, *r* value which indicated the measure of linear relationship between 2 variables. From the table 4.5, we can see that the Pearson *r* value between each variable and itself is equal to 1. This means that the Pearson *r* value for the ROA with ROA is equal to 1. This showed that the correlation of any variable with itself would be perfect and so the correlation of these boxes can be ignored. There was a diagonal cutting from the upper left to the lower right of the matrix which all of the correlations below the diagonal are same with the correlations that are shown above the diagonal. Therefore, we just need to concentrate to the correlations that are above the diagonal to interpret the output of our findings. The statements below the table 4.5 stated that if three asterisks placed next to the *r* value means that the correlation is significant at 0.01 or less than 0.01. And if there are two asterisks placed next to the *r* value means that the correlation is significant at 0.05 or less than 0.05. If there are one asterisk placed next to the *r* value means that the correlation is significant at 0.10 or less than 0.05.

This correlation matrix is used to interpret the degree and also the direction of relationships indicated by these correlations. The directions of each relationship is represented by the sign of the *r* value whether is positive (+) or negative (-). A positive sign indicates that the two variables are positively correlated where the high scores on one variable is associated with the high scores on the other variable. Meanwhile, a negative sign shows that high scores of one variable are associated with low scores on the other variable.

According to Appendix 4.3, three out of six independent variables have negative relationship to ROA, which included credit risk, capital ratio and asset quality. Based on the rule of thumb, CRE (r=-0.172844) has slightly or negligible relationship with significant level 5%. While ASS(r==0.243465) has weak negative relationship with significant level 5%. Based on the results, the correlation of CRE and ASS has weak negative relationship with ROA. Besides,

LIQ, EPO and SIZE have positive correlation with the ROA. OPE (r=0.400647) has moderate positive correlation with significant level 1%. SIZE (r=0.26999) has a weak positive relationship with ROA with significant level 1%. LIQ (r=0.035756) has very weak or negligible positive relationship; however LIQ results with no significant with ROA.

Among independent variables, OPE has the strongest correlation with ROA at 1% significant level reason because the operating expenses is the item that directly affect to the performance of banks. The components of Operating expense included salaries, wages paid to employees, overhead expenses, operating expenses and miscellaneous expenses. Firstly, the factor of training fees and commission, the one of the key people who could increase the performance bank is the fund manager. Fund manager is responsible for strategic planning and management of trading activities in mutual and trust fund. The well-trained fund manager could bring fruitful profit to banks. Besides, banks that pay higher salaries in order to attract skillful employees also the factor that considered in enhancing the performance of banks.

In addition, the programming and equipment maintenance costs, nowadays the technology is way too important which is a compulsory in order to function, connect and receive the latest data and information. Sophisticated devices and software is probably enhancing the performance of banks. With the better operating services to clients might increase the reputation of bank as well. Eventually, the effectiveness of routine work with defined technology also might consider in affecting the performance of banks.

Besides, for the larger banks, they could achieve the economies of scale which directly related to the performance of banks, that's why SIZE is positively correlated to ROA at 1% significant level. Large banks are likely to have greater loan and product diversification which imply higher ROA than smaller banks. In common, large banks has greater amount of deposits then could offer greater

amount of loan which directly increase the profit of banks. In addition, large banks could have better offer rate in saving compared to smaller banks with the application of economies of scale. Furthermore, depositors prefer to invest in larger banks rather in smaller banks in sake of security. Large banks have great reputation and impression to publics which would secure the confidence level of depositors and investors.

While ASS is also relatively important which affecting the performance of banks. Banks could perform better with greater management in loan and investment portfolio. Common item to control ASS is to manage the non-performing loans (NPL). NPL is a loan that locked up in non-profitable sectors which payment of principal and interest is no longer predictable or the maturity data has lapsed and full payment has not been made.NPL is said that would directly affect the economic stability and growth of economies. It stated there is a relationship between asset quality and bank performance. If bank's asset quality is insufficient, the bank will have to increase its bad debt losses and spend more resources on the collection of NPL. Here we tested the lower ASS indicates that better asset quality as NPL is numerator for the ratio while gross loan as denominator.

Next, CRE and ASS has a approximately strong positive relationship (r=0.69494), if there is high NPL, banks will need to set aside more loan loss provision to cover the NPL, they have correlation relationship to each other, so CRE and ASS has strong positive relationship. While OPE has weak positive relationship with CRE (0.298411), and has no or negligible relationship with other variables. ASS' and OPE' relationship are weak, because operating department normally are not in charged in the selection and supervision of borrowers, and loan while credit department do not engage in the management of operation. However, from the view of management accounting, banks which are likely to face bankruptcy appear to have a poor asset quality as well as a low OPE, they are positive related. If banks' asset quality is under the standard, the bank will have to increase its bad debt losses as well as spend more resources on the collection, banks will incur

extra operating costs from non-value-added activities so as to handle and supervise the collection process. These non-value-added activities consist of constantly tracking the debtors financial status, being cautious of the collateral value, discussing the amortization plan, paying expenses for contract negotiation, calculating the costs to withhold, deposit and disposing collateral at the time the loans become non payable. This could show OPE has direct correlated to ASS and CRE.

In addition, LIQ and CRE have moderate positive relationship as they are risks measurement. If the LIQ of banks are high, the CRE will be high as the liquid assets is lacking for the purpose to cover the unexpected scenario. LIQ and CRE are both in risk category, if the bank has is setting aside more LLP, it causes the poor credit rating, then bank has to increase the LLP by transferring liquid fund which induces the decrement of liquidity ratio of the bank, and liquidity risk increases. SIZE has weak positive relationship with LIQ and no or negligible relationship with other variable. However, LIQ is insignificant to ROA.

In next section, we separated to test the correlated of local banks and foreign Banks individually.

4.2.2 Correlation Analysis between ROA and all ratios of Local Banks

Table 4.6: Correlation between ROA and all ratios of Local Banks

LOCAL	ROA	LIQ	CRE	OPE	SIZE	ASS
ROA	1.000000					
LIQ	-0.343588	1.000000				
CRE	-0.252334	0.427593	1.000000			
OPE	-0.041194*	0.279633	0.539868	1.000000		
SIZE	0.345650	-0.126508	-0.251170	-0.125710	1.000000	
ASS	-0.425341	0.350895	0.674441	0.374263	-0.620492	1.000000

***. Correlation is significant at the 0.01 level.

**. Correlation is significant at the 0.05 level.

*. Correlation is significant at the 0.10 level.

Table 4.6 examined the correlation of local banks. According to Appendix 4.3, the result showed only ASS(*r*=-0.425341*)* has a strong negative relationship with ROA. This showed that ROA of local banks in Malaysia is strongly related to the management of non-performing loans (NPL). With lesser NPL, the bank could utilize the opportunity cost to do investing fund which will enhance the profitability of bank. While other variables like CRE has a weak negative relationship with ROA; OPE has no or negligible relationship with ROA.

On the other hand, SIZE showed there is moderate positive correlated with ROA(*r*=0.34565). it is true as local banks in Malaysia is still in growing stage which could categorized as small bank if comparing with other large banks in other countries. The growth of size of bank could relatively have positive effect to

profitability of bank as banks could achieve the economies of scale when bank's size is large.

LIQ(*r*=-0.343588*)* has moderate negative relationship with ROA. Local banks are depending on liquidity. Depositors would like to deposit and invest in the particular banks with low liquidity risk. With more deposits and fund, local banks will get greater ROA.

The correlations among independent variables are normal except for ASS to LIQ (*r*=0.674441) and ASS to SIZE(*r*=-0.620492). ASS has nearly very strong positive correlated to LIQ, this could be explain if local banks has lesser NPL they will invest the opportunity cost into deposits and short-term funding, in case of the sudden rise of NPL in following year. The banks usually make funding decision base on the historical statistic which they would not simply invest excess fund in high risk portfolio. Banks would move the excess NPL fund to liquidity so that NPL issue could easily settled if any oppose scenario occurred. In short the NPL low, the liquidity risk would be low as well. While for ASS to SIZE, it could be said loan is the main asset for banks to make profits. And NPL is the non-profit portfolio for banks; NPL could be the main burden for local bank to grow larger.

However, the correlation between ROA and all ratios of local banks are not reliable, as shown in Appendix 4.4 only OPE (-0.041194) is significant level at 10% to ROA, plus there is a weak or no negligible negatively correlation to ROA. Yet, this result could be useful for further researcher who interested in related study.

4.2.3 Correlation Analysis between ROA and all ratios of Foreign Banks

Table 4.7: Correlation between ROA and all ratios of Foreign Banks

FOREIGN	ROA	LIQ	CRE	OPE	SIZE	ASS
ROA	1.000000					
LIQ	0.051882*	1.0000000				
CRE	0.277199	.312647	1.000000			
OPE	0.705522***	0.068679	0.067068	1.000000		
SIZE	0.354332	0.372429	0.121607	0.215470	1.000000	
ASS	0.046331	0.436867	0.603850	-0.133778	0.259271	1.000000

***. Correlation is significant at the 0.01 level.

**. Correlation is significant at the 0.05 level.

*. Correlation is significant at the 0.10 level.

Table 4.6 examined the correlation of foreign banks. According to Appendix 4.5, the result showed only OPE(r=0.705522) has a very strong negative relationship with ROA. This showed that ROA of foreign banks which developing in Malaysia is strongly related to the management of non-interest expenses. Non-interest expenses are helpful in profitability of foreign banks. Professional training, increase in wages, enhancement of operating serve could greatly improve the foreign bank profitability.

Besides, SIZE (r=0.354332) has moderate positive correlated with ROA. Same explanation like local bank's which foreign banks which developed could get a better profitability if the banks grow larger. For other variables, they have weak and or negligible positive correlated to ROA. Now comparing the correlation

among independent variables, ASS to LIQ (r=0.603850) has strong positive relationship with each other.

However, the correlation between ROA and all ratios of foreign banks are not reliable either. As shown in Appendix 4.5, only OPE and LIQ are significant to ROA. Yet, this result could be useful to further researcher who interested in related study.

4.3 Conclusion

In conclusion, we used two methods to analyze our data, which are descriptive analysis and correlation. The performance of bank in Malaysia is significantly affected by the internal variables. By using descriptive analysis we found that foreign banks based in Malaysia has higher return on assets, lower liquidity risk, lower credit risk, better quality assets even though small bank size comparing to local banks in Malaysia. . The ROA of banks in Malaysia can be explained by four out of five variables as the R square value of 0.344609 indicates that 34.46% of ROA can be collectively explained by the variables. We found that operating expenses has the strongest positively correlation to ROA by using correlation analysis. A conclusion will be drawn in the next chapter, explaining the study in an overall basis.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

This study investigated the performance of local and foreign commercial banks in Malaysia, for the ten-year period which starting from 2001 until 2010. In chapter 4, the data analysis generated different results by using various methods to regress the data collected.

While in this chapter 5, our research project is concluded by the summary of the findings on the comparative evaluation of Return on Assets between local and foreign banks in Malaysia. The first element in this chapter is the summary of our analyses made follows up with the discussions of our major findings and result. Next, the study implications are meant to allow individuals and practitioners to refer to our project as reference in the future. The last element is the limitations that we faced throughout the whole process of conducting this research project and recommendation made to future researchers.

5.1 Summary of Statistical Analysis

This section is the plan for data analyses that is use to examine the research question or hypothesis which are set using the data observed.

The first method of analyses is the descriptive method, this method transfer all the raw data into an easy, simple and understandable information that make readers have easy access to the mean, standard deviation, variance and others. In

descriptive analysis, there is significant relationship existed among all the variables with the return on assets, except for liquidity risk.

However, there is another inferential analysis which has been used in this study, which is correlations analysis. Correlation determines which internal determinant is highly correlated with the performance of banks in Malaysia in order to make sure which ratio to focus to enhance the profitability of banks. We use correlation to compare which differences correlated variables with return on assets in local and foreign banks respectively.

5.1.1 Descriptive Analysis

Based on the research hypotheses that were set up in Chapter 1:

Table 5.1: Summary of Statistical Analysis

	Hypothesis	Coefficient	Conclusion
H_1	*Liquidity risk has significant relationship with return on assets*	0.000240	Insignificant
H_1	Credit risk has significant relationship with return on assets	-0.00324**	Significant
H_1	Operating expenses has significant relationship with return on assets	0.937678***	Significant
H_1	Bank size has significant relationship with return on assets	0.001320***	Significant

H_1	Asset quality has significant relationship with return on assets	-0.046175**	Significant

Notes

i. ***. Significant at the 0.01 level
ii. **. Significant at the 0.05 level
iii. *. Significant at the 0.10 level

The first objective of this study is to examine the performance of local banks and foreign banks. In this context, performance of banks will be assessed in terms of their return on assets. We find that the performance of foreign banks is better than local banks. Refer to Chapter 4, Table 4.2 and 4.3 shows average of return of assets between local banks and foreign banks. As comparison, foreign banks have the higher return on assets. Other than that, foreign banks have relatively lower liquidity risk, credit risk, operating expenses, banks size, and asset quality than local banks. This means that foreign banks able to perform better in term of their liquidity risk, credit risk, operating expenses, and asset quality even though they have smaller bank size than local banks.

The second objective is to determine internal determinants that affecting the performance of local and foreign banks. The result in Table 5.1 shows the effect of all determinants to the return on assets respectively. This summarization shows that credit risk, operating expenses, bank size, and asset quality have significant relationship with return on assets, while credit risk and asset quality have negative effect and operating expenses and bank size have positive effect on return on assets. However, liquidity risk coefficients estimate is positive and not significant to the return on assets of banks. This suggest that, liquidity risk is does not significantly influence the performance of bank (return on assets).

The third objective is to identify and determine the relationship between the factors affecting return on assets, which comprises liquidity risk, credit risk, operating expenses, banks size, and asset quality. The result of regression analysis stated that the value adjusted R square = 0.325395 suggesting that all five determinant could 32.54% predict the return on assets of the banks.

5.1.2 Correlation Analysis

This study uses Pearson's correlation test to examine the correlation relationship between variables and ROA. This study found that OPE (r=0.400647) has the strongest positive correlation to banks in Malaysia. Molyneux and Thornton (1992) which suggested that high profits earned by firms may be due to higher payroll expenditures paid to a more productive human capital. This study has the same result with Sufian's (2009) finding which shows that there is a positive correlation between the expenses preference behavior and Malaysian bank profitability.

Besides, the growth of bank size (r=0.269999) has the second strongest positive correlated to ROA. This study agreed with Pasiouras and Kosmidou (2007) which find a positive and significant relationship between the size and the profitability of a bank. This is because larger banks are likely to have a higher management of product and loan diversification than smaller banks, and because large banks have advantage from economies of scale.

5.2 Discussions of Major Findings

This paper examines the relationship between the performance, return on asset, of local and foreign commercial bank in Malaysia and internal factors, including liquidity risk, credit risk, operating expenses, bank size and asset quality.

5.2.1 Liquidity Risk

The results obtained from the analysis methods in the previous chapter shows that liquidity risk has an insignificant positive relationship with the profitability of the banks. This result is similar with the findings Bourke (1989) and Kosmidou (2006). Liquidity risk has affected to return on assets of banks positively and insignificantly, the coefficient estimate is 0.000240 and t-statistics is 0.893055. In comparison, mean of liquidity risk for local banks is 3.878865; While, mean of liquidity risk for foreign banks is 3.110825.

5.2.2 Credit Risk

The results obtained from the analysis methods in the previous chapter shows that credit risk has a significant negative relationship with the profitability of the banks. This result is similar with the findings Miller and Noulas (1997). Credit risk has affected to return on assets of banks negatively and significantly, the coefficient estimate is -0.003241 and t-statistics is -2.316541. Therefore, we accept hypothesis 2. In comparison, mean of credit risk for local banks is 1.328186; While, mean of credit risk for foreign banks is 0.898199.

5.2.3 Operating Expenses

The results obtained from the analysis methods in the previous chapter shows that operating expenses has a significant positive relationship with the profitability of the banks. This result is similar with the findings Neceur (2003). Operating expenses has affected to return on assets of banks positively and significantly, the coefficient estimate is 0.937678 and t-statistics is 6.742619. Therefore, we accept the hypothesis 3. In comparison, mean of operating expenses for local banks is 0.015179; While, mean of operating expenses for foreign banks is 0.014636.

5.2.4 Bank Size

The results obtained from the analysis methods in the previous chapter shows that operating expenses has a significant positive relationship with the profitability of the banks. This result is similar with the findings Pasiouras and Kosmidou (2007). Bank size has affected to return on assets of banks positively and significantly, the coefficient estimate is 0.001320 and t-statistics is 3.590496. Therefore, we accept hypothesis 4. In comparison, mean of bank size for local banks is 24.72274; While, mean of bank size for foreign banks is 22.95714.

5.2.5 Asset Quality

The results obtained from the analysis methods in the previous chapter shows that operating expenses has a significant positive relationship with the profitability of the banks. This result is similar with the findings Kosmidou (2008). Asset quality has affected to return on assets of banks negatively and significantly, the coefficient estimate is -0.046175 and t-

statistics is -2.430506. Therefore, we accept hypothesis 5. In comparison, mean of asset quality for local banks is 0.061373; While, mean of asset quality for foreign banks is 0.023774.

5.3 Implications of the Study

5.3.1 Managerial Implication

Practically, this study provides a better insight on the relationship between internal variables (liquidity risk, credit risk, operating expenses, bank size, and asset quality) and the performance of local and foreign commercial banks in Malaysia. It gives the implication for the local banks and foreign banks to improve the performance of bank. Banks should focus on the factors which have the positive relationship with the profitability of banks. The management of asset quality of bank's portfolio has directly effect to the bank performance. Sanjeev (2007) has found that NPL has relationship with both monitoring of banks and economic down turns factors. NPL in falls under non-profitable sector, which is the burden preventing the banks to grow. As previous dealing cases, NPL is one of the main causes which induce the subprime and financial crisis, and NPL has a significant relationship with economic fluctuation. Yang (2003) has estimated economic growth not only significant to NPL, but also is consistent with the expected signs.

Besides, the main concern of the investors is the profitability of banks. So the important internal determinants could be the guide for investors to discover whether the bank has achieved their desire outcome and performance. This study shows that foreign banks have higher ROA and better asset quality than local banks although their bank size is smaller. With this useful information as guidance, they may be able to realize when

to make the investment decisions accurately so that they will not losses in investment recklessly. Besides, they would learn the knowledge about how those internal determinants in financial statements of banks will affect the banks performance and profitability. Example the usefulness of the research, given that the information regarding comparing the performance of domestic banks and foreign banks, Mwenda and Mutoti (2011) found that when the reforming of financial sector from year 2003 to year 2008 in Africa, both investors and depositors transferred their cash and investment to foreign banks which were considered safer.

Besides, this study is helpful for governments, policy makers and financial economists to have a clear insight that the relationship between those internal determinants which can directly derived from financial statement of banks and the performance of banks. Since commercial banks has play an important role in financial sectors which transmitting the surplus fund from household saving by giving an interest income to the shortage fund sector by offering loans, banking sector is relatively important in role to help the development of a country's economic. Governments can use this study as their guidance to monitor the performance of banking industry, while policy makers can take this as their reference in their decision making process in a matter of promoting economy efficiency.

In addition, this study can help the future researchers who are interested in related topic for further study.

5.4 Limitations of the Study

One of the limitations of this study is that fluctuation of banks' return on asset. Banks like Affin Bank Berhad, AMMB Holdings Berhad and Deutsche Bank (Malaysia) Berhad had face difficulties in early 2000. The return on assets of these

banks have dropped, and formed an outlier. Hence, these fluctuations have slightly affected the computations of the mean of return on assets, which is calculated in ten-year period basis. In addition, we have ignored the incident for the year of subprime crisis which happened in year end of 2008 to early year of 2009; even though it has indirectly effect to the financial sector of Malaysia.

Second limitation of this study is that it mainly focused on the effect of the five major internal independent variables to examine the performance of banks. However, this variables set is not exhaustive, in other words, it does not cover all aspects fully. It has ignored the effect of other independent variables, as well external variables, which will have effect on banks' return on asset. As shown in the result earlier in chapter 4, R square of 0.344609 indicates that 34.46% of return on assets is explained by the factors, liquidity risk, credit risk, operating expenses, bank size, and asset quality. While, remaining 65.54% remains ambiguous. It is unclear that which internal and external factors have strong effect on return on asset. Thus, there is still a wide range of internal and external variables would have effect on the performance of the banks.

Third limitation of this study is the valuation of each ratio. There are many different formulas to calculate for the ratio respectively. Different formulas used different denominator and nominator, different in measurements will give a different figures of ratios, thus, values of return on asset of banks will be different as well.

5.5 Recommendations for Future Research

In order to get more collaborative evaluation of the banks' return on asset, the further researchers should include more ratios which are not tested in this study. By this way, researcher can have a clearer analysis and able to see the changes of return on asset of banks during the years, with the evaluation of internal and

external factors. In addition, future researchers can extend the study by taking into consideration of the economic/ financial crisis to examine the performance of banks, as crisis will cause a strong impact on every country's financial sector.

Besides that, the data for this study has been processed analyze using the correlation analysis. For future researchers, it is recommended to use more other statistical analysis to conduct the study.

5.6 Conclusion

In conclusion, banks' performance or profitability, return on asset, of local and foreign commercial banks in Malaysia influenced by liquidity risk, credit risk, operating expenses, bank size, and asset quality. Result shows local banks has higher liquidity risk, bad asset quality, higher credit risk, larger bank size yet has lower ROA compared with foreign banks based in Malaysia. Besides, OPE is the strongest positively correlated to ROA among the variables, proves that commercial banks in Malaysia could concern more in research and development of human capital and technology in order to enhance the performance of banks. However there is a very strong positively correlated between ASS and CRE which commercial banks in Malaysia must be aware of the NPL and credit risk issue, as this is serious issue related to efficiency of banks as well as the economic condition. We would like to suggest the future researchers to take into account of the other minor internal and global macroeconomic factors that affect the performance of banks, in order to get a better understanding on the research.

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APPENDICES

Appendix 3.1

Background of 8 Local Commercial Banks

Local Commercial Bank	Background
Affin Bank Berhad	Affin Bank Berhad is a subsidiary of Affin Holdings Berhad. It was incorporated in January 2011 after the merging between Perwira Affin Bank Berhad and BSN Commercial (M) Berhad in August 2000. In June 2005, it merged with Affin-ACF Finance Berhad. Currently, it has 96 branches nationwide. The bank serves both retail and corporate customers.
Alliance Bank Berhad	Alliance Financial Group was founded in early 2001 through a consolidation of 7 financial institutions, including Multi-Purpose Bank Bhd, International Bank Malaysia Bhd, Bolton Finance Bhd, Bumiputra Merchant Bankers Bhd, Sabah Bank Bhd, Sabah Finance Bhd and Amanah Merchant Bank Bhd, where Multi Purpose Bank Berhad anchored the merger. Alliance Bank Berhad is one of the subsidiaries of the group.
AMMB Holdings Berhad	AMMB Holding Berhad, comprises in AmBank Group where AmBank Group is the fifth largest banking group in Malaysia. It was incorporated in year 1991. AmBank Group was established in August 1975 and it provides financial services to all customers in Malaysia. AMMB Holdings is an

	investment holding company and the function is to control the subsidiaries and affiliates of AmBank Group, providing financial services to individuals and business via 175 offices. The company operates in several segments such as retail, business and investment banking, insurance and Islamic financial services. It has acquired AmIslamic Bank Berhad on 28 February 2011.
CIMB Bank Berhad	CIMB Bank Berhad is one of the subsidiaries of CIMB Group. It is headquartered in Kuala Lumpur and has planted branches and offices in 14 countries, covering ASEAN. CIMB Group is a regional universal bank in ASEAN. CIMB Group operates under several corporate entities including of CIMB Investment Bank, CIMB Bank, CIMB Islamic, CIMB Niaga, CIMB Securities International and CIMB Thai. CIMB Bank provides as a consumer banking arm for its group by offering retail banking services to 6 million customers in 324 branches around the world. It is the second largest consumer bank in Malaysia and hold significant market shares for all consumer banking products.
Hong Leong Bank Berhad	Hong Leong Bank Berhad is a member of Hong Leong Group Malaysia. It has been in the banking industry since 1968 via Hong Leong Finance Berhad and Since 1982 via Dao Heng Bank Ltd. in Hong Kong which were then sold to other banking institution. Hong Leong Bank was established in the year of 1905 in Kuching, Sarawak, Malaysia under the name of Kwong Lee Mortgage and Remittance Company. In 1934, it was incorporated as Kwong

	Lee Bank Ltd. In 1989, it was operating with 25 branches under after renamed into MUI Bank. In January 1994, Hong Leong Group acquired MUI Bank and the birth of Hong Leong Bank had happened in the same year. Lately, it had also completed the merging with EON Bank Group in 2011. To date, Hong Leong Bank has 329 branches and offices in Malaysia, Singapore, Hong Kong and Vietnam.
Malayan Banking Berhad	Maybank Group is one of the leading financial services providers in Malaysia. It has the largest network among the Malaysian banks by having 2100 branches and offices planted in 17 countries. They had employed more than 42 thousand workers and serving over 21 million customers. Besides that it, it holds the largest asset base which is more than USD135 billion and market captalisation of USD 22.0 billion, total equity of USD 10.8 million and total net profit USD 1.5 billion.
Public Bank Berhad	Public Bank was founded in 1966 by Tan Sri Dato'Sri Dr. The Hong Piow with it purpose is to be the bank for public. It is the third largest banking group in Malaysia. Expanding slowly, Public Bank transformed from just having 1 branch in the early stage to a premier banking group in Malaysia with overseas market presence. It has expanded internationally to Cambodia, Vietnam, Laos, Hong Kong, China and Sri Lanka. Public Bank Group has a total of 401 branches and over 17,500 employees serving over 8 million of local and other countries customers. The function of the group is to provide

	retail and commercial banking services with full financial service.
RHB Bank Berhad	RHB Banking Group was formed in 1997 after the merging and consolidation starting from the year of 1913. It is the fifth largest financial service group in Malaysia. RHB Bank Berhad is one of the subsidiaries of RHB Capital Berhad and wholly owned RHB Islamic Bank Berhad. The establishment of RHB Bank is through major mergers with Kwong Yik Bank Berhad, Sime Bank Berhad (formerly known as UMBC Bank), DCB Bank Berhad and Utama Banking Group.

Appendix 3.2

Background of 8 Foreign Commercial Banks

Foreign Commercial Banks	Background
Bank of China (Malaysia) Berhad	Bank of China was established its first branch in Penang in 1939 and had been expanded to become five with another four which situated in Kuala Lumpur, Ipoh , Seremban and also Batu Pahat. Bank of China (Malaysia) Berhad recommenced their business on 23 February 2001, due to the rapid economic and trade development between Malaysia and China which also been supported by the two Government.
Citibank Berhad	In 16 June 1812, Citibank was established which formerly known as City Bank of New York with a total capital of $2 million. The Citibank NA headquarter is located in New York and started its business in the city itself. In the past 200 years, Citibank has gone through many acquisitions and developments which expanded across the world. Samuel Osgood was the one who controlled the activities of the bank since 1812 to 1813, however, in 1929 Famers' Fire Insurance and Loan Company in the United States merged with Citibank. During the year of 1982 to 1984, Citibank has become the largest bank holding company which follows the acquisitions of savings and loan in Florida, California and Illinois. Citibank Berhad is the approved division of Citigroup which allocated in

	United States and present in Malaysia since 1959. The headquarters of the bank is located in Kuala Lumpur which the bank providing the retail and corporate banking services in the country.
Deutsche Bank (Malaysia) Berhad	Deutsche Bank was founded in Berlin to promote and facilitate trade relations between Germany and international markets. Deutsche Bank opened its first branch for Malaysia was in Kuala Lumpur in 1967. Since then, the bank has significantly expanded its activities in Malaysia to serve its domestic and international clients. As a Global Bank, Deutsche Bank in Malaysia offers clients which can easy access to both regional and global markets. Moreover, Deutsche Bank was integrated into the newly founded European Asian Bank. Deutsche Bank (Asian) merged into Deutsche Bank AG and began to operate under the name of Deutsche Bank AG in the branch in Kuala Lumpur, however, Deutsche Bank also opened an offshore branch in Labuan.
HSBC Bank Malaysia Berhad	HSBC Bank Malaysia (HSBC) is the second oldest bank in Malaysian history after the Mercantile Bank started operations 24 years earlier in 1860. In 1884, its first office was in Penang with the privileges to issue currency notes and indirectly become the oldest bank in Malaysia when it acquired the Mercantile Bank in 1959. HSBC Bank Malaysia is the largest foreign-owned bank in Malaysia from a network of branches or direct channels by offering a full range of personal and commercial services. Besides, in 1994, HSBC Bank also offering Islamic

	financial services in Malaysia. Currently, HSBC Bank Malaysia has a network of 40 branches nationwide.
OCBC Bank (Malaysia) Berhad	OCBC Bank (Malaysia) Bhd was born out of the Great Depression in 1932 with the merged of three banks which are Chinese Commercial Bank Limited (1912), Ho Hong Bank Limited (1917) and the Oversea-Chinese Bank Limited (1919). OCBC Bank provided customers with financial solutions such as personal and business needs and also supports the community which indirectly helped to rebuild Singapore's war torn economy after 1945. OCBC Bank has been operating in Malaysia for more than seven decades and nowadays become one of the top three foreign bank in the country with the total assets of RM30 billion. OCBC Bank innovation is focus on introducing new products and services in order to meet customers' changing needs.
Standard Chartered Bank Malaysia Berhad	Standard Charted Bank Malaysia Berhad was incorporated in 29 February 1984 by a member of the Standard Charted Group which had been establishing in 1875 and is based in Kuala Lumpur, Malaysia with additional offices in Penang, Johor Bahru and Kota Kinabalu. As Malaysia's first bank, Standard Charted bank comes out with the difference ways of products innovation, consistent and strong growth performance and sustainability initiatives. Besides, Standard Charted Bank Malaysia Berhad provided retail, Islamic and wholesale Banking products and services for

	individuals, small and medium sized enterprises and also the corporate and institutions in Asia, Africa and Middle East.
The Bank of Nova Scotia Berhad	The Bank of Nova Scotia also known as the Scotiabank which is the third largest bank in Canada by deposits and market capitalization. In 1832, the bank was found in Halifax, Nova Scotia but in March 1990 the bank moved its executive offices to Toronto, Ontario. Due to the acquisitions primarily in Latin America, Caribbean, Europe and India, Scotiabank has allocated itself as "Canada's International Bank". The Bank of Nova Scotia has 31 years history in Malaysia and in 1973 started to commenced its operations while was locally incorporated as the Bank of Nova Scotiabank Berhad in 1994. Scotiabank is proud to maintain a presence in Malaysia by offering a full range of retail, commercial corporate and trade services.
United Overseas Bank (Malaysia) Berhad	United Overseas Bank (UOB) Malaysia took over the operations of Lee Wah Bank Limited (LWB) in 1994 and incorporated in Malaysia in 1993. LWB was incorporated in Singapore in 1920 and opened its first Malaysian branch in 1956, however, in 1973 LWB become wholly owned subsidiary of United Overseas Bank Limited, Singapore. In 7 June 1997, UOB Malaysia merged with Chung Khiaw Bank (Malaysia) Bhd while in 2 February 2002 UOB Malaysia Bhd merged with Overseas Union Bank become one legal entity. UOB Malaysia now operated 37 strategically located branches well which principally engaged in providing a range of

	commercial and personal financial services such as commercial lending, investment banking, treasury services, home loans and so on, through its subsidiaries and associate companies as well as the branches. UOB Malaysia operates a wide network of 41 branches across Malaysia and Kuala Lumpur becomes the headquartered of the company in Malaysia.

Appendix 4.1

Raw data and mean of dependent and independent variables of eight local commercial banks in Malaysia for year 2001 until 2010

YEAR/VARIABLE	ROA	LIQ	CRE	OPE	SIZE	ASS
AFFIN BANK BERHAD						
2001	0.0123	8.5301	4.7250	0.0239	23.7310	0.1789
2002	0.0209	6.9129	2.9617	0.0201	23.7458	0.2236
2003	0.0189	2.6854	2.6494	0.0184	23.7743	0.2159
2004	0.0314	4.6049	1.6352	0.0087	23.6151	0.2227
2005	0.0336	4.8922	1.8138	0.0186	23.9419	0.1321
2006	0.0305	2.8100	1.8498	0.0155	23.9878	0.1179
2007	0.0327	2.6765	2.3239	0.0176	23.9903	0.0775
2008	0.0332	3.5725	1.0216	0.0173	24.0458	0.0340
2009	0.0321	3.9808	0.7266	0.0148	24.1355	0.0237
2010	0.0279	3.3653	0.6332	0.0134	24.2915	0.0296
ALLIANCE BANK BERHAD						
2001	0.0258	15.5902	1.2312	0.0155	23.3298	0.1032
2002	0.0268	7.9004	1.4163	0.0160	23.4890	0.1077
2003	0.0275	8.2644	1.2732	0.0160	23.5435	0.0919
2004	0.0314	5.4376	1.3612	0.0137	23.7204	0.0833
2005	0.0345	5.8572	1.0787	0.0140	23.7937	0.0812
2006	0.0309	3.8570	2.0548	0.0163	23.8000	0.0892
2007	0.0337	2.1755	1.7757	0.0178	23.9153	0.0526
2008	0.0348	2.9800	1.4039	0.0160	23.9745	0.0317
2009	0.0299	2.7639	1.0594	0.0158	24.0727	0.0180
2010	0.0288	4.1129	1.0424	0.0153	24.0168	0.0160
AMMB HOLDINGS BERHAD						
2001	0.0126	4.6206	1.6648	0.0165	23.0400	0.1809
2002	0.0150	5.4352	1.6465	0.0188	22.9907	0.1969

2003	0.0102	3.8059	1.6830	0.0141	23.0893	0.1648
2004	0.0290	5.4997	1.6716	0.0235	24.8256	0.1008
2005	0.0472	4.6781	1.7239	0.0260	24.8485	0.1309
2006	0.0396	4.3947	1.5878	0.0216	25.0035	0.0977
2007	0.0405	3.8920	2.2822	0.0186	25.0879	0.0627
2008	0.0405	4.2486	1.4869	0.0191	25.1444	0.0369
2009	0.0364	3.3046	1.0252	0.0186	25.2219	0.0256
2010	0.0371	4.7868	0.9844	0.0161	25.2926	0.0153
CIMB BANK BERHAD						
2001	0.0400	0.8128	1.4941	0.0148	22.8068	0.0992
2002	0.0339	0.8998	0.9082	0.0135	23.2524	0.0382
2003	0.0399	0.8443	0.5205	0.0139	23.3079	0.0241
2004	0.0278	3.1503	1.3109	0.0243	25.0262	0.0788
2005	0.0353	4.6741	1.4640	0.0159	24.9777	0.0674
2006	0.0319	3.4937	1.6261	0.0186	25.5736	0.0611
2007	0.0395	2.5658	1.3250	0.0206	25.6648	0.0410
2008	0.0361	4.4055	1.3156	0.0178	25.7142	0.0246
2009	0.0337	2.8500	0.8100	0.0194	25.7998	0.0114
2010	0.0329	3.1321	0.8635	0.0192	25.8639	0.0261
HONG LEONG BANK BERHAD						
2001	0.0390	1.7825	1.0353	0.0126	23.9209	0.0873
2002	0.0249	1.5630	1.0153	0.0116	23.9985	0.0821
2003	0.0499	2.1153	1.0720	0.0118	24.0736	0.0649
2004	0.0331	1.2425	1.1642	0.0129	24.3282	0.0542
2005	0.0393	1.7444	0.9244	0.0121	24.7781	0.0575
2006	0.0265	1.7449	0.8104	0.0093	24.7331	0.0337
2007	0.0243	1.1688	0.6916	0.0113	24.9154	0.0205
2008	0.0268	1.3451	0.5687	0.0115	24.9717	0.0152
2009	0.0264	1.4654	0.5734	0.0115	24.9822	0.0141
2010	0.0243	1.6046	0.5528	0.0109	25.0765	0.0127
MALAYAN BANKING BERHAD						
2001	0.0376	4.5423	2.3722	0.0139	25.4371	0.0668

2002	0.0353	4.2500	2.1731	0.0133	25.4839	0.0647
2003	0.0411	3.9152	2.1161	0.0141	25.5726	0.0566
2004	0.0370	3.3799	1.7954	0.0146	25.6900	0.0575
2005	0.0515	4.0584	1.5353	0.0152	25.8905	0.0468
2006	0.0371	4.1844	1.4197	0.0149	26.0068	0.0370
2007	0.0357	2.7375	1.3075	0.0149	26.1502	0.0306
2008	0.0341	4.2290	1.0220	0.0144	26.1131	0.0183
2009	0.0324	5.7744	1.1555	0.0163	26.1967	0.0146
2010	0.0367	5.7154	1.0398	0.0165	26.2383	0.0114
PUBLIC BANK BERHAD						
2001	0.0296	1.7630	0.6659	0.0174	24.4261	0.0414
2002	0.0322	1.9527	0.6192	0.0141	24.5612	0.0236
2003	0.0378	1.5326	0.5302	0.0133	24.7839	0.0192
2004	0.0473	2.5089	0.6991	0.0113	25.2103	0.0215
2005	0.0291	2.4927	0.5565	0.0110	25.3995	0.0173
2006	0.0287	2.8270	0.5652	0.0089	25.6231	0.0164
2007	0.0280	2.5173	0.5600	0.0083	25.7888	0.0132
2008	0.0276	2.7897	0.4848	0.0080	25.8395	0.0091
2009	0.0256	3.0860	0.5235	0.0081	25.8970	0.0067
2010	0.0295	4.6025	0.5351	0.0078	25.9512	0.0097
RHB BANK BERHAD						
2001	0.0338	7.3227	1.4861	0.0139	24.6149	0.0637
2002	0.0306	8.5343	2.1082	0.0152	24.7226	0.0706
2003	0.0273	9.7459	2.7303	0.0164	24.8303	0.0774
2004	0.0370	2.9775	1.6713	0.0203	24.9909	0.0576
2005	0.0253	2.5543	1.6783	0.0124	25.0294	0.0502
2006	0.0291	3.7277	1.3097	0.0139	25.1770	0.0449
2007	0.0323	2.5977	0.9778	0.0136	25.1667	0.0338
2008	0.0358	4.1056	1.0022	0.0142	25.1569	0.0212
2009	0.0326	4.0138	0.9962	0.0139	25.2670	0.0201
2010	0.0327	5.6300	0.7794	0.0131	25.3789	0.0306
MEAN	0.0317	3.8789	1.3282	0.0152	24.7227	0.0614

Appendix 4.2

Raw data and mean of dependent and independent variables of eight foreign commercial banks in Malaysia for year 2001 until 2010

YEAR/VARIABLE	ROA	LIQ	CRE	OPE	SIZE	ASS
Bank of China (Malaysia) Berhad						
2001	0.0167	0.4052	0.4027	0.0219	20.0341	0.0067
2002	0.0315	0.5617	0.3111	0.0191	20.0626	0.0070
2003	0.0205	0.5199	0.4605	0.0157	20.5652	0.0050
2004	0.0237	0.5213	0.5450	0.0141	20.5688	0.0014
2005	0.0298	0.5456	0.5279	0.0135	20.5939	0.0004
2006	0.0309	0.4907	0.4734	0.0067	20.8033	0.0216
2007	0.0323	0.5722	0.5779	0.0129	20.8198	0.0167
2008	0.0330	1.5346	0.7111	0.0136	20.9673	0.0069
2009	0.0233	0.8401	0.8109	0.0126	21.1925	0.0001
2010	0.0215	0.8044	0.7694	0.0128	21.5105	0.0000
Citibank Berhad						
2001	0.0406	4.1826	0.6866	0.0202	23.8445	0.0231
2002	0.0506	7.7018	0.6343	0.0228	23.8436	0.0186
2003	0.0443	11.2228	0.6851	0.0219	24.0149	0.0162
2004	0.0354	2.3931	0.7643	0.0194	24.3636	0.0139
2005	0.0387	1.8350	0.7410	0.0166	24.3311	0.0155
2006	0.0414	2.6097	0.5873	0.0192	24.3678	0.0144
2007	0.0353	1.1180	0.5517	0.0172	24.5464	0.0164
2008	0.0423	1.3197	0.5643	0.0170	24.5549	0.0122
2009	0.0453	1.5360	0.5819	0.0172	24.3970	0.0123
2010	0.0477	1.7251	0.5060	0.0197	24.3508	0.0155
Deutsche Bank (Malaysia) Berhad						
2001	0.0475	0.8505	1.9071	0.0223	21.8777	0.0121
2002	0.0406	0.4016	1.7332	0.0191	21.8425	0.0087

2003	(0.0076)	0.2845	1.0645	0.0134	22.3332	0.0059
2004	0.0379	0.1707	0.6029	0.0152	22.3481	0.0128
2005	0.0360	0.2711	0.4881	0.0148	22.4063	0.0077
2006	0.0262	0.1130	0.3925	0.0140	22.9066	0.0109
2007	0.0240	0.3092	0.2191	0.0097	23.2217	0.0090
2008	0.0257	3.1956	0.1467	0.0082	23.1131	0.0084
2009	0.0226	0.1795	0.1925	0.0098	23.1410	0.0108
2010	0.0261	0.1388	0.2210	0.0107	23.1987	0.0104
HSBC Bank (Malaysia) Berhad						
2001	0.0451	4.6834	2.5582	0.0232	23.8647	0.0505
2002	0.0424	6.8113	1.9676	0.0229	23.9289	0.0398
2003	0.0371	3.9979	1.3415	0.0223	24.0875	0.0325
2004	0.0383	3.2287	1.1082	0.0216	24.2378	0.0293
2005	0.0421	2.6221	0.8056	0.0223	24.3216	0.0165
2006	0.0471	3.0039	0.6512	0.0226	24.4369	0.0106
2007	0.0460	2.0365	0.5570	0.0215	24.5973	0.0083
2008	0.0482	2.8543	0.5649	0.0204	24.6271	0.0073
2009	0.0385	2.0570	0.7110	0.0196	24.6891	0.0098
2010	0.0351	2.4269	0.6976	0.0196	24.8041	0.0094
OCBC Bank (Malaysia) Berhad						
2001	0.0320	7.0011	0.9299	0.0099	23.7784	0.0711
2002	0.0310	5.2000	1.1595	0.0101	23.8284	0.0753
2003	0.0275	5.3308	1.3681	0.0097	23.9609	0.0713
2004	0.0284	10.0258	1.3833	0.0108	24.0410	0.0568
2005	0.0301	9.1265	1.4157	0.0127	24.1509	0.0353
2006	0.0295	3.8853	1.1947	0.0124	24.3261	0.0317
2007	0.0309	4.5362	0.9467	0.0138	24.4654	0.0251
2008	0.0345	5.6677	0.8429	0.0138	24.5211	0.0208
2009	0.0305	2.3841	0.8245	0.0121	24.6244	0.0251
2010	0.0311	2.5410	0.7402	0.0120	24.6835	0.0180
Standard Chartered Bank Malaysia Berhad						

2001	0.0433	4.7671	1.7876	0.0203	23.7234	0.0683
2002	0.0433	4.7671	1.7876	0.0203	23.7234	0.0683
2003	0.0377	5.1694	1.0463	0.0197	23.8882	0.0371
2004	0.0334	2.9110	0.8018	0.0166	24.1162	0.0292
2005	0.0335	2.4352	0.8361	0.0158	17.3682	0.0200
2006	0.0330	1.5683	0.7250	0.0149	17.4824	0.0234
2007	0.0358	1.2201	0.5346	0.0159	17.5512	0.0179
2008	0.0445	6.6160	0.5972	0.0173	24.4201	0.0173
2009	0.0305	2.1576	0.8469	0.0161	24.4386	0.0077
2010	0.0317	4.3438	0.8999	0.0170	17.6070	0.0046
The Bank of Nova Scotia Berhad						
2001	0.0219	2.9438	0.9253	0.0061	21.6080	0.0174
2002	0.0203	3.1608	1.1889	0.0055	21.6240	0.0265
2003	0.0222	2.0343	0.9620	0.0062	21.7244	0.0290
2004	0.0107	1.5930	2.1000	0.0028	21.7588	0.0327
2005	0.0205	1.7423	0.9668	0.0065	21.8345	0.0614
2006	0.0224	1.6108	0.9254	0.0062	21.8306	0.0415
2007	0.0187	1.9781	1.0684	0.0088	21.9716	0.0277
2008	0.0199	3.4871	1.1452	0.0069	22.2662	0.0081
2009	0.0259	4.7393	0.8858	0.0064	22.1166	0.0046
2010	0.0287	4.5992	0.7771	0.0061	22.0856	0.0052
United Overseas Bank (Malaysia) Berhad						
2001	0.0305	2.1663	1.0756	0.0139	23.2511	0.0470
2002	0.0343	3.2658	1.6374	0.0169	23.7055	0.0603
2003	0.0284	2.8080	1.4570	0.0111	23.9506	0.0625
2004	0.0268	4.8171	1.2720	0.0105	24.0854	0.0611
2005	0.0335	2.4352	0.8361	0.0158	24.2760	0.0200
2006	0.0348	7.2222	0.9339	0.0117	24.1883	0.0419
2007	0.0362	13.3887	0.8859	0.0133	24.3062	0.0270
2008	0.0302	3.2096	0.8859	0.0131	24.4462	0.0271
2009	0.0318	4.2649	0.7571	0.0119	24.4781	0.0257
2010	0.0315	3.6693	0.7286	0.0128	24.6483	0.0167

MEAN	0.0323	3.1108	0.8982	0.0146	22.9571	0.0238

Appendix 4.3

Result of OLS Regression of combination of local and foreign banks

Dependent Variable: ROA
Method: Panel Least Squares
Date: 02/15/12 Time: 17:10
Sample: 2001 2010
Periods included: 10
Cross-sections included: 16
Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIQ	0.000240	0.000269	0.893055	0.3732
CRE	-0.003241	0.001399	-2.316541	0.0218
OPE	0.937678	0.139067	6.742619	0.0000
SIZE	0.001320	0.000368	3.590496	0.0004
ASS	-0.046175	0.018998	-2.430506	0.0162
C	-0.008700	0.008602	-1.011389	0.3134

R-squared	0.346609	Mean dependent var	0.032013
Adjusted R-squared	0.325395	S.D. dependent var	0.009141
S.E. of regression	0.007508	Akaike info criterion	-6.908871
Sum squared resid	0.008681	Schwarz criterion	-6.793552
Log likelihood	558.7097	Hannan-Quinn criter.	-6.862044
F-statistic	16.33870	Durbin-Watson stat	1.400902
Prob(F-statistic)	0.000000		

Appendix 4.4

Result of OLS Regression of combination of local banks

Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/13/12 Time: 17:47
Sample: 2001 2010
Periods included: 10
Cross-sections included: 8
Total panel (balanced) observations: 80

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIQ	-0.000462	0.000425	-1.087194	0.2805
CRE	-0.002875	0.002015	-1.426730	0.1579
OPE	0.490931	0.277775	1.767372	0.0813
SIZE	0.001714	0.001311	1.307491	0.1951
ASS	-0.032890	0.029241	-1.124769	0.2643
C	-0.010492	0.032939	-0.318533	0.7510

R-squared	0.245878	Mean dependent var	0.031713
Adjusted R-squared	0.194924	S.D. dependent var	0.008738
S.E. of regression	0.007840	Akaike info criterion	-6.787073
Sum squared resid	0.004549	Schwarz criterion	-6.608421
Log likelihood	277.4829	Hannan-Quinn criter.	-6.715446
F-statistic	4.825478	Durbin-Watson stat	1.199784
Prob(F-statistic)	0.000713		

Appendix 4.5

Result of OLS Regression of combination of foreign banks

Dependent Variable: ROA
Method: Panel Least Squares
Date: 03/12/12 Time: 18:06
Sample: 2001 2010
Periods included: 10
Cross-sections included: 8
Total panel (balanced) observations: 80

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIQ	0.000641	0.000322	1.991563	0.0501
CRE	-0.002709	0.002039	-1.328684	0.1880
OPE	1.280025	0.150132	8.525996	0.0000
SIZE	0.000671	0.000442	1.517445	0.1334
ASS	0.052304	0.052003	1.005798	0.3178
C	-0.002636	0.009648	-0.273233	0.7854

R-squared	0.578383	Mean dependent var	0.032314
Adjusted R-squared	0.549896	S.D. dependent var	0.009573
S.E. of regression	0.006423	Akaike info criterion	-7.185877
Sum squared resid	0.003053	Schwarz criterion	-7.007225
Log likelihood	293.4351	Hannan-Quinn criter.	-7.114250
F-statistic	20.30297	Durbin-Watson stat	1.801970
Prob(F-statistic)	0.000000		

Appendix 4.6

The rule of thumb for Pearson's Correlation as:

Coefficient's range	Strength
±0.91 to ±1.00	Very Strong
±0.71 to ±0.90	High
±0.41 to ±0.70	Moderate
±0.21 to ±0.40	Weak
±0.00 to ±0.20	Slight, negligible

Adopted From: Hair, J. F., Money, A. H., Samouel, P, & Page, M. (2007). Research methods for business. Chichester, West Sussex: John Wiley & Sons, Inc.