THE DETERMINANT OF PROFITABILITY OF FOREIGN COMMERCIAL BANKS IN MALAYSIA

By

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Thesis Submitted to

Othman Yeop Abdullah Graduate School of Business,

Universiti Utara Malaysia,

in Partial Fulfillment of the Requirement for the Master of Sciences (Banking)

Pusat Pengajian Ekonomi,
Kewangan dan Perbankan

SCHOOL OF ECONOMICS, FINANCE, AND BANKING

Universiti Utara Malaysia

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ABSTRACT

This research is conducted to determine the profitability of foreign commercial banks in Malaysia based on five factors which are bank size, loan to asset ratio, inflation rate, interest rate, and the Gross Domestic Product, (GDP). An intensive desk research is conducted as measure to determine the present issue related to foreign commercial bank profitability in Malaysia. It is found that as of January 2018, there are 28 commercial banks in Malaysia. Nevertheless, this research focused on ten foreign commercial banks operating in Malaysia. Furthermore, this study utilise secondary data as the main source of information in conducting the analysis in this research. The data are extracted mainly from the income statement and also balance sheet in the annual report of each respective foreign commercial bank operating in Malaysia for the period of 2007 to 2016. Based on the analysis computed via SPSS statistical software application, this study suggested that the profitability of foreign commercial banks in Malaysia is influenced by bank-specific determinants which is bank size, loan to asset ratio, and interest rate while the macroeconomic determinants which is GDP and Inflation rate are considered as not significant towards return on asset of the foreign commercial banks.

ACKNOWLEDGEMENT

First of all I'm grateful to God for I finally managed to complete this research paper. My success in completing this research is solely due to the support and prayers from my beloved parents and siblings. Moreover, continuous assistance I receive from my dear friends is another factor that constitute to my success. Therefore, I thank them all for always being there for me. Thank You for everything.

In addition, without proper guidance by those involved, I might not be able to complete the chores successfully. I am therefore very indebted to my supervisor, Dr. Logasvathi Murugiah and also lecturers of my university; Universiti Utara Malaysia whom have contributed enormously to enable me completing this research project. With God's will, their support, expectation and sacrifice have given me extra energy to keep moving until I finally manage to obtain my Master's Degree.

Thank You.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This dissertation begins with the explanation on the determinant of profitability of foreign bank in Malaysia. Briefly, chapter one is the chapter that explains the framework of study through identification of research objectives and research questions. Moreover, it is the chapter that provides in-depth discussion on the limitation, structure and the significance of study. A brief chapter conclusion concludes chapter one.

1.2 Overview of the Malaysian Banking System

Historically, the main function of bank is accepting demand deposits and making commercial loans. In the process of lending and borrowing activities, there are many factors involved which influences the return on asset of the bank. Moreover, the roles of the banking industry evolved over time had strengthen the position of banks as a vital component in the financial system. In Malaysia, the growth of the economy is much influenced by the involvement of the foreign commercial banks. These international banks are among the main industries that contribute to Malaysian economic development.

Over the decade, commercial bank experienced economic turbulence such as in the year 1985 to 1986; the first economic downturn period and followed by financial crisis in 1997 to 1998. Due to the financial crisis, in 2002, the Malaysian government and Bank Negara Malaysia (BNM) started the implementation of reformation of commercial banking regulation and banking standards. BNM had reform the regulatory to enhance and reshape the domestic bank survival in Malaysia. Thus, the economic downturn has geared up and prepared the banking system to meet the challenging future. Apart from the economic and regulatory framework, the technology wisdom plays an important role in this globalization of banking industry. The adaption of technology had helped to reform the new image of banking world toward the customers or users. Undoubtedly, it made the Malaysian banking industry to be more competitive.

As of 2018, there are eight local commercial banks and 20 foreign commercial banks operating in Malaysia. The function of the foreign commercial banks can be broadly classified into two sections which are primary function and secondary function. The primary function is more a tradition banking activities which offer product and services such as accepting demand deposits, time deposits and advancing loans. The secondary function implies when bank act as an agents in collecting and paying cheque, safeguard facilities, foreign exchange transaction, electronic fund transfer and electronic banking. These are the fundamental activities that contribute to foreign bank profitability.

Foreign commercial banks in Malaysia are well established in the attempt to provide various types of product and service to satisfy the customer's need. Commercial foreign banks need to carefully evaluate the risk involve as measure to improve the quality of the products and services. Moreover, risk assessment is a vital aspect in bank's operation since it influences the decision making process of various aspects such as the procedure of giving consumer loan. Nevertheless, the profitability of the banks is much dictate by the analysis of the risks involved in the decision making process.

1.3 Background of the Study

The performance level of a bank is dependent upon the profitability rate. Based on the financial crisis of 2007 to 2009, Olweny and Shipho, (2011) dictates that it is imperative to keep bank performance level under constant surveillance since it influences the local and international economy stability. Moreover, assessment of the bank performance is significant since it helps to control the under performance banks. The banking profitability is affected by various factors besides economic, regulatory framework and technology wisdom. The economic and regulatory may affect the bank profitability positively or negatively.

The bank profitability is very important to various groups of people such as the bank shareholders, investors, bank management bodies, regulators, bank employees, depositors and businesses whom are benefited from the profitability of the bank. The calculation of Return on Asset, (ROA) helps the shareholders to evaluate their Return on Investment, (ROI). Similarly, investors calculate the projection of the future stock price based on the past and present performance level of the bank. On the other hand, the performance level of the bank management body is closely related to the capability in managing the organisation which is often analyse based on the profitability rate of the bank. In addition, the remuneration package of the employees of a bank is dependent upon the performance level.

Furthermore, to maintain public confidence with the banking industry, regulators supervise the profitability rate of the banks through various measures which include physical evaluation and computer based system such as the adaptation of the IT tracking system. Similarly, the confidence level of the depositors is closely related to the performance level of the banks. Moreover, the society generally perceive economic stability based on the profitability of the banking sector.

Profitability of banks represents the revenue of the bank. The calculation of the ROA, helps to measure the effectiveness level of the banks in using the capital to generate profits. In other words, the increase of bank profit is directly relate to the computation of the Return on Asset, (ROA). In contrast, the calculation of the Return on Equity, (ROE) measures how effective a bank is using shareholder's equity. ROE also represents the amount of money or return earned on each dollar invested. Nevertheless, because of the importance of these attributes, this research aims to evaluate the significance relationship between each factor with bank profitability.

1.4 Problem Statement

The Malaysian economy hit the bottom line during the 1998 Asian financial crisis and this leads to massive changes of the banking sector in the country. To recover economy deterioration and heightened uncertainty in the country, the government implements selective capital control to maintain a good stability posture by following risk management policies and standards. Banking institutions were rescheduling and restructuring the policies according to the needs of financial constraints.

At the beginning of the financial institution in Malaysia, 90% of the banking market were controlled by the local commercial banks since the international banks were not allowed to operate in the country. However, the new policy made in 1971 that allowed the international banks to operate shifted the monopoly of the local banks in Malaysia. Moreover, in 1994 under BAFIA regulation and act the international banks that operate in Malaysia are allowed to be locally incorporated. Nevertheless, since the new Act, the international banks operating in Malaysia were treated as domestic commercial bank where all the activity of transaction takes place.

When was the foreign commercial bank start to face the challenges in their performances? It was started from the global economy downturn (1997-1998) and during the Asian financial crisis (1997). It is continuously running until now and the impact was severed. The profitability of foreign commercial bank was affected mainly due to the economic crisis of the country and the Asian financial crisis. There were many economic downturn face by the country in the mid of 1997-1998. The unexpected deterioration of the currency and capital markets impacted the responsibility of a bank as a financial institution. Due to this situation, the Bank Negara Malaysia, (BNM) has to injected additional capital and new management framework to stabilize the monetary of the country. This crisis have been prolong until current period where the financial institution is still under the pressure of economic crisis.

Therefore, it is imperative for the foreign commercial banks to evaluate and asses past performance level since the stability of the bank's operation in Malaysia is dependent upon it. Currently, there were 20 foreign commercial banks to support the financial market in Malaysia banking sector compared to eight (8) local commercial banks. Foreign commercial banks become one of main contributor of income to the banking sector compared to past decade. The foreign commercial banks also enhanced an expansionary programme to develop their strength and increase efficiency as financial intermediaries in domestic market.

There are many factors impacting the profitability of foreign commercial banks such as inflation, GDP growth, concentration of economy and political issues. These are the external factors that indirectly affect the profitability of a bank. Other than external factors, there were internal factors such as bank size, total assets, liquidity risk or credit risk and interest rate which affect directly to the bank's profitability. This is supported by research performed by Rasiah, (2010) which mentions that internal factors are the main attribute influencing the performance level of banks. Guru et al., (2002) focus on internal and external factors of conventional bank profitability in Malaysia. Jamal et al., (2012) reported that macroeconomic factors determined the foreign commercial banks profitability. However, Vejzagic et al. (2013) explains that interest rate did not influence the foreign commercial bank profitability but Growth Domestic Product (GDP) significantly affects foreign commercial bank profitability in Malaysia

There were many research on commercial bank profitability had focused on the impact and factor that affected bank profitability performance. This study is more focus on foreign commercial bank profitability. This is because, in current situation the growth of foreign banks in Malaysia is more rapid compared to the local banks. Nevertheless, the main purpose of this study is to develop a framework that helps to evaluate factors influencing the profitability rate of foreign commercial banks.

How this research could be helpful and beneficial to the bank's management in the decision making in future? The results of this study can improve the decision making process of the foreign commercial banks since the analysis focuses on various attributes that influence the profitability of banks. Moreover, this study is significant in Malaysia since there is limited number of research focus on the profitability of foreign commercial banks in Malaysia particularly in the year of 2018. Therefore, this study aims to improve the gap of understanding in relation to the profitability of foreign commercial banks.

1.5 Research Questions

1. What are the relationship between internal factors and Return on Asset (ROA) of foreign commercial bank profitability in Malaysia?

2. Which are the relationship between external factors and Return on Assets (ROA) of foreign commercial bank profitability in Malaysia?

1.6 Research Objectives

This research aims to investigate and examine the factors influencing the profitability of foreign commercial banks for the period of 2007 to 2016. Therefore, the research objectives are:

1. To examine internal factors relationship toward Return on Asset (ROA) of foreign commercial bank profitability in Malaysia.

2. To investigate external factors that significant related to Return on Asset (ROA) of foreign commercial bank profitability in Malaysia.

1.7 Significance of Study

Through this study, academician, bankers, students, and Malaysian policy makers will be able to understand the present scenario of the country's banking sector. Furthermore, there are limited number of researches and studies pertaining to profitability of banks particularly in Malaysia. Nevertheless, through this research, an in-depth understanding regarding the subject can be acquired and this inadvertently can help to provide relevant resources on the subject matter.

Moreover, in line with Malaysia' Vision 2020, it is significant for the country to produce more researches as medium and source of information to support the development of the country which in this case refer to the banking sector. Thus, another significance of this study is in narrowing the gap of knowledge associate with the study of banking and finance.

1.8 Limitations of Study

Data availability is the primary limitation in conducting this study. The researcher found that it is hard to access certain data associates with the foreign commercial bank in Malaysia since it is considered as restricted information. Nevertheless, through a thorough online research, the researcher managed to gather reliable data associates with the scope of study.

Second is in terms of references. There are limited number of researches and studies concerning bank profitability in Malaysia. This indirectly forces the researcher to utilise case study from other countries as measure to gather the literature associate with the scope of study.

Third is in terms of time. The availability of time to complete this study is indeed another limitation of study. A longer period of time to complete this study can provide an avenue for the researcher to review more books, journals, publications, and past research papers. Nevertheless, within the time frame this study managed to gather appropriate and suitable source of information.

1.9 Structure of Dissertation

This dissertation is organised in five chapters that starts with **chapter one**. The first chapter is the chapter that discusses the banking system in Malaysian, background of study, and the problem statement. Based on the issues, the research objectives and questions were formulated. Moreover, the first chapter is the chapter that provides brief explanation on the significance, limitations, and structure of study.

C**hapter two** presents the literature reviews associates with the variable of study. Briefly, this chapter provides an in-depth discussion on the scope of study which includes but not limited to bank size, total loan to assets, Gross Domestic Product, (GDP), inflation rate and interest rate, foreign commercial banks in Malaysia, and bank profitability. Nevertheless, the literature reviews have encouraged the conduct of this research study.

Chapter three presents the research methodology adapted by this research. Briefly, this chapter is the chapter that outlays and presents the method used by the researcher in gathering the secondary data, analysing, and presenting the data. Moreover, this chapter also explains the research dimension, approach, and technique adapted for this study purposes.

Based on the secondary data gathered by the researcher, an analysis was computed via the utilisation of the SPSS statistical software application. The results of the analysis were presented in **chapter four** of this dissertation. Based on the analysis, an interpretation of findings was discussed in this chapter.

Finally, **chapter five** presents the discussion on the objectives achievement. Based on the conduct of this research study, a concrete recommendations for future researches are discussed in this final chapter. The final section is a brief conclusion of this research study.

1.10 Conclusion

The main purpose of this research study if to provide a detailed assessment on the various factors influencing the profitability of foreign commercial banks in Malaysia. Supported by the current scenario of the banking sector in Malaysia and the problem associates with the scope of study, this research managed to identify five key research objectives and questions. Moreover, chapter one managed to discussed the significance, limitations and structure of dissertation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two is the chapter that presents discussion on various literatures associate with the scope of study. Past researches and studies associate with the profitability of foreign commercial banks are discussed briefly in this chapter. In the past years, there were many discussion, journal and studies about the foreign commercial banks. In those studies, the major focus is on the factors influencing the determinant of foreign bank. It explains the importance of the foreign commercial bank in the context of economy.

There are various factors that can bring the changes in foreign bank. The changes can happen in term of regulation, operation and management of the foreign commercial bank. In addition, the bank's profitability can be determined by internal and external factors. Based on past researches, there are various attributes that influences the profitability rate of banks. These factors could be economic, operational or management factors.

2.2 Bank Profitability

To understand the concept of bank profitability, this research starts by discussing the various definitions associate with the terminology and continue with the discussion on bank profitability based on past researches and studies. Table 2.1 indicates the eight (8) definitions of bank profitability by different authors.

Table 2.1

Definitions of bank profitability by different scholars and authors

No.	Authors	Year	Definition
1	Boahene, S.H., Dasah, J., & Agyei, S.K.	2012	The return on assets which measured by dividing banks' net profits by its total assets.
2	Alexiou, C., & Sofoklis, V.	2009	Return on average assets (ROAA) able to measure it.
3	Iloska, N.	2014	Profits after tax divided by total assets (%)
4	Aremu, M.A., Ekpo, I.C., & Mustapha, A.M.	2013	There are two measurement for it, either Return on Assets (ROA) or Return on Equity (ROE).
5	Shehzad, C.T., De Haan, J., & Scholtens, B	2013	Expressed as a function of internal and external factors, and calculated in Return on Assets (ROA), and Return on Equity (ROE).
6	Bessis, J.	2012	Accounted by using Return on Assets (ROA).
7	Alkassim, F.A.	2015	Measured in the return on average total assets.
8	Yilmaz, A.A.	2013	A situation in which income generated.in a given period is more than the expense over the same period of time

Briefly, Return on Asset (ROA) is focus to gain profit by maximize the asset of the organization which dictates by the internal and external factors. On the other hand, a study performed by Athanasoglou, et al., (2008) classifies three constructs that influences the profitability of bank which is the bank specific, macroeconomic, and industry specific factors. The bank specific factors is directly related to the operation activity of the bank while the macroeconomic factors is in relation to the general context of the country's economy where the bank operates. Furthermore, the industry specific factors refer to the transactions between the banks with transnational organisation.

Briefly, the banks function as an intermediary party between the depositors and the borrowers. The profit is generated through the interest charge for each loaning activities. Furthermore, bank's main expenses is the dividend paid to the depositors. However, the profitability of banks is closely influence by the economic condition. Nevertheless, this is among the main reasons for most researchers to undergo studies in relation to bank profitability.

Bank profitability is often measure by the calculation of the Return on Asset, (ROA) and the Return on Equity, (ROE). However, the factors that influences the profitability of bank is different between one researches to another. According to Rasiah, (2010) the performance level of the bank's management body is closely related to the the calculation of the Return on Asset, (ROA). This is also supported by the result of the study performed by Flamini, et al., (2009) in Africa. On the other hand, the profitability of bank is directly related to the calculation of the Return on Equity, (ROE) (Goddard, et al., 2004b). Nevertheless, these are some of the major examples of researches that studied the concept of bank profitability. Moreover, there are multiple of researches that use ROA or ROE as the dependent variable.

Furthermore, a research conducted by Sufian, (2009) in relation to the Asian financial crisis in 1997 to 1998 concludes that banks are under performance level because of various factors which include deficient capital, imprecise evaluation of credit assessment, and the increases of the non-performing loans. On the other hand, study performed by Goddard, (2004) dictates that there is positive and significant relationship between bank size and profitability. Moreover, the study also found that there is negative and insignificant relationship between ownership structures with the profitability of the European banking industry.

2.3 Interest Rate

Research performed by Hanweck and Kilcollin, (2014) states that the relationship between interest rate and bank profitability is directly correlate particularly in countries with an advance banking system. This is supported by the result of study performed by Ismail and Sulaiman, (2002) which states that interest rate is one of the major determinant factors influencing the calculation of the Return on Asset, (ROA). Similarly, Demirguc and Huizinga, (1999) mentions that the increase of the interest rate tends to increase the bank's profits. Therefore, based on past researches interest rate is reviewed as one of the main determinant factors influencing the profitability of banks.

Moreover, this is correlated with the fact that bank gains profits primarily through lending activities which depend on the rate of interest (Hanweck and Kilcollin, 2014). A higher interest rate will result in higher profit since bank will earn higher for the amount of capital lend and / or borrow to consumers. Similarly, Hanweck and Kilcollin, (2014) mentioned that the profitability of bank is positively related with the interest rate charge on the loan.

2.3.1 Relationship between Interest Rate and Bank Profitability

Increase of the interest rate tend to helps bank to gain a higher profit. A study performed by Samuelson, (1945) mentions that there is significant relationship between interest rate and the profitability of bank. On the other hand, Maudos and Fernández (2004) states that banks earn higher profit when the interest rate increases since the risk of investment is transferred to the consumer. Similarly, Molyneux and Thornton (1992) argues that bank profitability is positively correlate with the rate of interest.

On the contrary, a study conducted by Gambacorta and Mistrulli (2004) dictates that a drastic change of the interest rate can negatively effects bank profitability. This is because of the discrepancies between the maturity rate and the repricing frictions.

2.4 Inflation Rate

A recent study by Perry, (2012) defined inflation rate as the increases of the value of the products and services over a period of time. Briefly, it can be interpreted that Inflation corrodes the consumer's purchasing power because the consumers are forced to purchase less items with similar amount of currency. Similarly, inflation can also be interpreted as the loss of purchasing power (Aremu, Ekpo, and Mustapha, 2013). Consumers have to purchase goods and services at higher prices due to the loss of currency value.

Inflation rate is another macroeconomic factor affecting bank profitability. Briefly, inflation is the change of the price for goods and services in a country. In other words, inflation rate is the shift of price for goods and services that can either increase or decrease which influences the consumer's purchasing power. Therefore, it is the role of the Bank Negara Malaysia, (BNM) to control the inflation rate in Malaysia. Briefly, the definition of inflation rate can be defined as the macroeconomic factors that influence bank profitability (Angbazo, 2014).

2.4.1 Relationship between Inflation Rate and Bank Profitability

There are various researches that studies the relationship between interest rate and the profitability of bank such as the research prepared by Kosmidou, et., al. (2005) which mentions that inflation creates a positive impact toward bank profitability. However, this positive relationship between inflation rate and profitability of bank is influence by the factor whether the bank anticipate or not on the changes of the inflation rate. This is because, if the banks were anticipated the changes, they will be able to prepare a contingency plan to mitigate the issue such as through adjustment on the interest rates. However, for the case of unanticipated inflation, Kosmidou, et., al. (2005) argues that the relationship between inflation rate and bank profitability is negatively correlate.

On the other hand, Gul, et al., (2011) states that inflation rate is one of the macroeconomic factors that have a positive relationship with bank profitability. This is supported by the research performed by Macau, et al., (2006) which dictates that inflation rate have a positive and significant relationship with bank profitability. Similarly, Sufian and Akbar, (2012) mentions that the Indian banking industry tends to anticipate the inflation rate and this has significantly help the banks in India to gain higher profits and therefore they concluded that there is positive and significant relationship between inflation rate and the profitability of bank. On the other note, a study conducted by Gul, et., al. (2011) in Pakistan also dictates that the relationship between inflation rates and bank profitability is positive. Moreover, Mendes and Abreu (2003) suggests that despite increasing the cost, inflation also helps bank to generate higher profit.

Inflation rate is considered as one of the major determinant factor influencing the return on asset of bank. Based on the analysis of data associates with the commercial banks in the United States (US), Kanas, Vasiliou and Eriotis, (2012) found a positive relationship between inflation rate and the profitability of the commercial banks. This results of analysis is similar to the research performed by Garcia, et al., (2009) which found that an increase on one percentage point of the inflation rate will resulted in the increase of the bank's return on asset.

2.5 Growth Domestic Product, (GDP)

One of the major economic facts use in determining the stability of nation's economy is the Gross Domestic Product, (GDP). The strength of a nation economic is measured based on the GDP value. A higher GDP value signifies positive growth rate. The profitability of the banks relies on the availability of monetary of the bank to facilitate the transaction within the economy. Profitability of banks always fluctuates due to economic growth and changes in Gross Domestic Product, (GDP). Similarly, Hanweck and Kilcollin, (2014) mentioned that the profitability of banks is positively correlated with the growth rate of GDP in the country at which the bank operates. According to Roulet (2012), the macroeconomic environment is likely to bring impact to the activities of banks together with decisions of the investors. The demand for financial products and services will increase when the condition of the economic good which will improve the profitability of banks to enhance their financing a portfolio at a better or even higher rate.

2.5.1 Relationship between Growth Domestic Product and Bank Profitability

Most recently, research by Omotayo (2016) found the significant relationship between Gross Domestic Product, (GDP) and the profitability of banks in Nigeria for the period between 2005 to 2014. The study explains thst the growth of the Return on Asset, (ROA) for banks in Nigeria can help to boost the nation's Gross Domestic Product, (GDP). Therefore, the research dictates that there is significant and positive relationship between bank profitability and the Gross Domestic Product, (GDP) in Nigeria. On the contrary, a study performed by Ongore and Kusa, (2013) mentions that the declining of the Gross Domestic Product, (GDP) value tends to reduce the demand for credits and therefore they concluded that there is negative but significant relationship between Gross Domestic Product, (GDP) with the profitability of bank.

Furthermore, a study conducted by Vong and Hoi, (2009) mentions that in times of good economic condition, the number of default loans is lower compared to the time of economic recession. The research further explains that during the period of positive economic growth, the demand for credit increase significantly and this helps the bank to secure a larger profits. Therefore, the research concludes that there is positive and significant relationship between the Gross Domestic Product, (GDP) with the profitability of bank.

2.6 Total Loan to Asset Ratio

By definition, total loan to asset ratio is the proportion between the sum of total debt to the sum of the total asset (Alper and Anbar, 2011). It is often use as an index to determine financial leverage of an organisation. This is because, the calculation of the total loan to asset ratio helps to provide the proportion of assets that were financed by debts and liabilities. Briefly, the calculation of the total loan to asset ratio is computed by dividing the sum of debts with the sum of assets own by a company. Nevertheless, based on past researches and studies loan to asset ratio is considered as one of determinant factors associate with the return on asset of banks.

2.6.1 Relationship between Total Loan to Asset Ratio and Bank Profitability

Recent study prepared by Sufian, (2009) mentions that the computation of the loan to asset ratio is use as an index to determine the profitability of bank. The research also concluded that there if significant relationship between loan to asset ratio with the profitability of bank. A higher loan to asset ratio signifies that the bank has a lower liquidity rate and therefore the risk of bank to be default increases. This is because the performance of loan is closely related with the economy condition. Therefore, bank probability to generate higher profits is influence by the rate of loan to asset ratio. In times of economic recession, the rate of default loans increases and this significantly impact the profitability of bank.

On the other hand, according to study prepared by Bashir and Hassan, (2003) when the rate of loan to asset ratio is high bank probability to generate higher revenues increases. They concluded that there is positive and significant relationship between loan to asset ratio with the profitability of bank. This is supported by the study conducted by Dietrich and Wanzenried, (2009) in Switzerland which reported that an increase in the rate of the loan to asset ratio helps the bank to generate higher profits.

Based on another study performed by Sufian, (2011) in Korea, the relationship between loan to asset ratio with bank profitability is reviewed as significant and positively correlated. The research concluded that the proficiency of bank management body in managing the operation helps to lower the operation cost which in turn allow the bank to offer a more ideal loan term. This inadvertently helps the bank to generate higher revenue since the borrowers are able to pay the loans. Similarly, a research conducted by Khan et al. (2011) in Pakistan found that the relationship between loan to asset ratio with the profitability of bank is significant. The research concluded that increases of the loan to asset ratio signifies that the bank is able to provide more loans which in turn helps the bank to secure a larger profit.

On a different note, the study performed by Alper and Anbar, (2011) in Turkey found a negative relationship between loan to asset ratio with the profitability of bank. Similarly, the research conducted by Atemnkenf and Joseph, (2006) in Cameroon reported a negative relationship between loan to asset ratio with the Return on Asset, (ROA). These results are also supported by a study performed by Molyneux and Thornton, (1992) which concluded that the discrepancy between the demand for loans with the qualification of the borrowers leads to higher cases of default loans.

2.7 Bank Size

There are various definitions associate with Bank Size as presented through table 2.2.

Table 2.2

Definitions of bank size by different scholars and authors

No.	Authors	Year	Definition
1	Ramlall, I.	2009	The total assets of bank.
2	Boyd, J.H., & Runkle, D.E.	2013	Calculated by the logarithm of total asset (log A).
3	Ali, K., Akhtar, M.F., & Ahmed, H.Z.	2011	The accounting value of banks total assets.
4	Joel, B.	2012	An outcome of accumulated bank growth.
5	Golin, J.	2010	Total assets a bank has.
6	Allen, A.J., Shaik, S., Myles, A.E., & Yeboah, O.A.	2011	Large bank: Total assets over US$10,000 billion in 1998. Small bank: Total assets less than US$10,000 billion in 1998.

The sum of the total assets of a bank for the period of a year define the size of the bank. It is an important attribute that defines the profitability of a bank. Gauging the size of banks is an important issue as banks play a central role in most countries' financial systems. It is tightly regulated and supervised. In this research, bank size is determined by calculating the log of the total assets owned by a bank for the period of a year. The size of a bank significantly influence the efficiency level. A large bank might be able to undertake a greater risk to increase portfolio diversification. However, if not properly manage the efficiency level might decrease even if the size of the bank is large. Nevertheless, this issue is one of the many reasons that encourage banks to alter the banking structure.

In times of economic recession such as during the period of 2008 to 2009, large banks that were classified as *"too big to fail"* became a leading concern for most countries since the failure of these banks can further deteriorate the nation's economy. Therefore, since the incident, the Basel Committee on Banking Supervision has developed policies to govern and supervise large banks as measure to control the growth rate. According to Abduh and Idress (2013), this study investigate the impact of bank specific as well as industry-specific and macroeconomic factors on bank profitability in Malaysia. The study conclude that the bank size is vital in affecting bank profitability. There are other factors affecting the bank profitability rather than bank specific. However, the bank size contributing the importance to affect the bank profitability compared to other variables due to bank size hold the big proportion assets in bank.

2.7.1 Relationship between Bank Size and Bank Profitability

A research conducted by Syafri, (2012) mentions that large banks possess the ability to create a greater economy if scale which in turn helps to reduce the operation cost and therefore maximizing the profits. The study concluded that there is significant relationship between bank size and the profitability of bank. On the other hand, studies performed by Goddard, et., al., (2004) and Camilleri, (2005) concludes that the size of a bank which is measure by the total assets owned by the bank has a significant and positive relationship with bank profitability. Similarly, research by Sufian and Akbar, (2012) in India supports this conclusion by mentioning that bank profitability is dependent on the size of the bank.

On the other hand, Alper and Anbar (2011) states that large banks possess the ability to influence the market since they are able to reduce the marginal cost of operation which in turn helps these large banks to increase their profitability. Similarly, the research conducted by Yilmaz, (2013) by utilising the panel data for the period of five years found that there is significant and positive relationship between the size of bank with the Return on Asset, (ROA). The research concluded that the profitability of bank increases when the size of the bank increases.

On the contrary, Berger, et al., (1987) mentions that the increases of the size of a bank tend to reduces the cost saving measure and this leads to a negative relationship between bank size and the profitability of bank. Furthermore, research by Staikouras and Wood, (2004) mentions that reduction on the economy of scale for banks that increases the size tend to happens and this leads to a negative relationship between the size of bank with the profitability of bank. Similarly, a research conducted by Syafri (2012) in Indonesia that measure a panel data for the period of ten years reported that the relationship between bank size and the profitability of bank is negative and therefore it is not considered as a significant factor that influences the bank profitability.

2.8 Conclusion

Various studies and researches concerning the determinant factors influencing bank profitability were discussed in chapter two. Briefly, the five independent variables which are Bank Size, Total Loan to Assets, Gross Domestic Product, (GDP), Inflation Rate and Interest Rate and the one dependent variable which is bank profitability was discussed briefly from the context of theoretical and empirical study. Based on the literatures, it is found that there are various results of studies proven by past researches. However, most of the studies were not conducted in Malaysia. Therefore, this study shall provide a new finding on the determinant factors related to the return on asset of the foreign commercial banks operating in Malaysia.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of the research methodology is to identify the most suitable and appropriate methods to conduct this study. Among key aspects discussed in this chapter is the sampling technique, method of collecting the data, and the process of analysing the data. Briefly, this study is prepared to investigate the relationship between bank size, inflation rate, loan-to-asset ratio, Gross Domestic Product, (GDP), and interest rate with the profitability of bank.

As of January 2018, there are twenty international commercial banks that conduct businesses in Malaysia. However, for this research purposes ten foreign commercial banks were selected. The study period chosen is from the year of 2007 to year of 2016; a total of ten years' time interval. The name of the foreign commercial banks operating in Malaysia is listed through Table 3.1.

Table 3.1
Foreign Commercial Banks in Malaysia

No.	Name of the Foreign Commercial Bank
1.	BNP Paribas Malaysia Berhad
2.	Bangkok Bank Berhad
3.	Bank of America Malaysia Berhad
4.	Bank of China (Malaysia) Berhad

5.	Bank of Tokyo-Mitsubishi UFJ (Malaysia) Berhad
6.	China Construction Bank (Malaysia) Berhad
7.	Citibank Berhad
8.	Deutsche Bank (Malaysia) Berhad
9.	HSBC Bank Malaysia Berhad
10.	India International Bank (Malaysia) Berhad
11.	Industrial and Commercial Bank of China (Malaysia) Berhad
12.	J.P. Morgan Chase Bank Berhad
13.	Mizuho Bank (Malaysia) Berhad
14.	National Bank of Abu Dhabi Malaysia Berhad
15.	OCBC Bank (Malaysia) Berhad
16.	Standard Chartered Bank Malaysia Berhad
17.	Sumitomo Mitsui Banking Corporation Malaysia Berhad
18.	The Bank of Nova Scotia Berhad
19.	The Royal Bank of Scotland Berhad
20.	United Overseas Bank (Malaysia) Bhd

3.2 Research Design

According to Bowen, (2009), a research can be designed in three types which are exploratory research which aims to develop a new theory; descriptive study which focused on defining a scenario or process distinctly; and explanatory research that studies the relationship between variables of study. Nevertheless, this study can be classified as an explanatory study. This is because the research objectives seek to understand the significant relationship between the independent variables (bank size, total loan to assets, Gross Domestic Product, (GDP), inflation rate, and interest rate) with the dependent variable (bank profitability; measure by the calculation of Return on Asset, (ROA)).

In addition, this research is classified as a quantitative research which is the process of gathering and analysing data in a numeric format. This helps to provide a more precise analysis since the collected data can be quantified, analysed and promptly understood. Briefly, this study is prepared based on the explanatory methodology which investigate the relationship between the independent variables and the profitability of the foreign commercial banks for the period of 2007 to 2016.

3.2.1 Data Definition and Description

The selection of the right sample size is significant since it influences the result of the study. This is because the findings of a research are determined based on the analysis conduct of the collected data. It is imperative to ensure that the sample respondents selected for this study representing the scope of study. Bowen, (2009) defined sampling frame as the prepared list of the prospective respondents targeted for the study purposes. The sampling frame of this research are the ten foreign commercial banks operating in Malaysia which are used to determine the significant relationship between bank size, loan to asset ratio, inflation rate, Gross Domestic Product, (GDP), and interest rate that affect the profitability of the foreign commercial banks in Malaysia. Sampling frame studied in this research is twenty foreign commercial banks. However, the targeted sample frame is ten foreign commercial banks in Malaysia.

This sampling method is considered as more pragmatic compared to doing a study on the general population. Among key issues related to sampling design is in terms of the selection of probability or non-probability sampling. For this research purposes, the probability sampling method will be used since this method is more effective in selecting ten out of twenty foreign commercial banks in Malaysia. Furthermore, convenience sampling method was used in determining the sample size. In this study, the researcher randomly selected the foreign commercial banks based on the availability of data. Nevertheless, the first ten foreign commercial banks in Malaysia which the researcher managed to gather the necessary data are the sample population for this study.

In addition, it is imperative to select specific sampling frame which in this research the selected sampling frame is the data extracted from the year of 2007 to

2016. The period of ten years selected for this study purposes is significant in providing a more precise and concise result of analysis. On the other hand, in term of time dimension, there are two type of time horizon which are longitudinal and cross sectional. In this research, the cross sectional is selected as the time horizon. This is because the sample data consists of a series of ten serial data for ten foreign commercial banks.

3.2.2 Data Collection Method

The primary data refers to the data gathered by the researcher which can be obtained through various methods such as the dissemination of questionnaire survey, phone interview, focus group discussion, observation survey, and others (Bowen, 2009). However, in relation with this research, the main data utilise is the secondary data. There is no primary data gathered by this study.

This study utilise secondary data as the main source of information in conducting the analysis in this research. Secondary data was gathered through desk research by conducting an extensive online search. The data consists of two attributes. First, is the internal attributes which is bank size and loan to asset ratio. On the other hand, external determinants refer to the interest rate, Gross Domestic Product, (GDP), and inflation rate.

The source of data for the internal attributes was extracted from the annual report of the various foreign commercial banks operating in Malaysia from the year of 2007 to 2016. This secondary data are extracted from the income statement and also balance sheet in annual report of each respective bank. On the other hand, the information of the external determinants was extracted from three main sources which is the website of the Asian Development Bank, the World Bank, and the Datastream. The summary of the data and the sources of information used in this research is listed under Table 3.2.

Table 3.2
Summary of Data and Sources

Data	**Sources**
• Inflation Rate • Gross Domestic Product (GDP) • Interest Rate	➢ Asian Development Bank website: (*www.adb.com*) ➢ The World bank Website: (*www.worldbank.org*) ➢ Datastream: (*financial.thomsonreuters.com*)
• Bank Size • Loan to Assets Ratio	➢ Various Bank's annual reports: (Income Statement and Balance Sheet)

3.2.3 Empirical Method

For this study purposes the research technique refers to the method used by the researcher in gathering the secondary data. Briefly, the researcher conducts an extensive online search on the key information associate with the scope of study. The information is the bank size, total loan to assets, inflation rate, Gross Domestic Product, (GDP), interest rate, and bank profitability of the ten foreign commercial banks operating in Malaysia. Nevertheless, online searching is considered as the primary research technique used in gathering the secondary data.

Analysis of the secondary data was conducted by utilizing two user friendly software which is Microsoft Excel and SPSS statistical software application. According to Bowen, (2009) data processing is defined as the process of analysing a series of data through the computer as measure to change and classify the data. In other words, it is a systematic process in converting a list of data into a series of information that can be interpreted with meanings.

The internal determinants data was gathered from various yearly reports of the ten foreign commercial banks. This secondary data was extracted primarily from the balance sheet and income statement of the annual reports which were downloaded from each foreign commercial bank's main website. Similarly, the external determinants data was extracted from the main website of the World Bank, the Asian Development Bank, and the Datastream. The dependent variable which is bank profitability was labeled as Return on Asset (ROA).

On the other hand, the independents variables were labeled as following: bank size as SIZE, loan-to-asset ratio as LTA, inflation rate as IR, Gross Domestic Product as GDP, and interest rate as I. The profitability of banks can be analysed through numbers of indicator. Nevertheless, the calculation of the bank profitability is reviewed as the main index since it provides a detailed insight of the bank capability in increasing its earnings. Therefore, this research calculates Return on Asset (ROA) as measure to find out the Return On Asset, (ROA) of foreign commercial banks operating in Malaysia between the time period of 2007 to 2016.

3.2.3.1 Missing Value

By definition missing value can be categorised in two categories which is system missing values and user defined missing values. In this research, the data extracted from the secondary sources were arranged using Microsoft Excel in determining the missing value. The researcher defined the missing value instead of using the system since this process can help to provide a more precise panel data. A through observation process was conducted as technique to determine the missing value. Nevertheless, this process is significant in determining the success of managing a large pool of cross sectional panel data.

3.2.3.2 Outliers

By definition, an *outlier* is an observation that lays abnormal distance from other values in a random sample size. In this research, the data extracted from the secondary sources were arranged using Microsoft Excel in determining the *outlier.* The researcher conducts examination on the set of data extracted from various secondary sources as mean to determine *outlier* in the sample data. The researcher eliminates the data that are far removed from the sample size. This is done through the process of plotting the sample data. However, a careful consideration was given before removing the *outlier* since it is possible that the *outlier* contain significant information which is vital for this study purposes.

3.2.3.3 Normality Analysis

According to Ali, et al., (2011), the error term (u_i) can be assumed in normal distribution based on the Classical Normal Linear Regression Model, (CNLRM). According to the rule of thumb, the statistic is considered as normally distribute if the value of skewness is (+/-) 2 and the value of kurtosis is within the range of -2 to 2. This research set this standard for normality analysis since this number was adapted by various studies such as the one prepared by Alper and Anbar, (2011) and the research conducted by Sufian, (2011) in Korea related to the profitability of banks.

3.2.3.4 Multicollinearity Analysis

According to Hanweck and Kilcollin, (2014), multicollinearity exists when there is more than one exact linear relationship between the variables of study. This creates issue in identifying the specific independent variable that may or may not affect the dependent variable. Briefly, there is no specific standard to test multicollinearity. Nevertheless, in this research the rule of thumb associates with multicollinearity is that the value of VIF must be less than 10 and the value of tolerance must be higher than 0.1. This technique is parallel with research prepared by Shehzad, et al., (2013) in the study of bank size, profitability and growth rate.

3.2.3.5 Linearity Analysis

This analysis is computed as a measure to determine the relation between the Independent Variables (IV) and the Dependent Variable (DV). The linearity relationship between variables is significant in ensuring the data is linearly dependent. This analysis helps to determine that the independent variables have a predictor effect in time on the dependent variable. In this research the *p*-value is used as benchmark in conducting the linearity analysis. The relationship between independent variables and dependent variable is consider as linearly dependent if the *p*-value is more than 5 % significance level.

3.2.3.6 Correlation Analysis

It is significant to conduct the correlation analysis in determining the error terms that exist between a series of cross sectional data in a sequence of time series data which in this research refers to the data extracted from annual reports of the ten foreign commercial banks operating in Malaysia for the time period of 2007 to 2016. Briefly, auto correlation happens when there is a correlation between the error terms at time period t and $t-1$.

For this research purposes the rule of thumb associate with the Durbin Watson Test which is a normal statistic range between 1.5 - 2.5 points is used as the benchmark in testing for correlation problem in the model. This is used as the benchmark in this research since previous studies performed by Boahene, et al., (2012) and Goddard, et al., (2004) that used the Durbin Watson Test to evaluate auto correlation in their respective models.

3.2.3.7 Regression Analysis

Regression analysis is used to assess the profitability of banks based on the relationship of the independent variables and the dependent variable (Return on Asset) whether it is significant or not significant. By conducting this research, it is hoped to separate the most significant and the least significant factor that influence the profitability of the foreign commercial banks in Malaysia. Moreover, the measurement is important in testing the research hypothesis whether there is significant or insignificant relationship between the independent variables (bank size, total loan to assets, Gross Domestic Product, (GDP), inflation rate, and interest rate) with the dependent variable (Return on Asset).

For measuring the profitability of bank, the present study evaluate several attributes which are the significance level, t value, the value of adjusted R^2, and the standardised beta value. Nevertheless, this is considered as the most suitable form of analysis since this research utilise a series of cross sectional data from ten foreign commercial banks in Malaysia for the period of ten years which is from the years of 2007 to 2016.

3.2.4 Regression Equation (Econometric Model)

This research utilise regression analysis technique to achieve its objectives. Therefore, the regression equation as follow:

$$Bp\ (ROA) = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\, SIZE + \boldsymbol{\beta}_2\, LTA + \boldsymbol{\beta}_3\, IR + \boldsymbol{\beta}_4\, I + \boldsymbol{\beta}_5\, GDP + E_{it}$$

Bp (ROA) = Bank Profitability (Return on Assets)

$\boldsymbol{\beta}_0$ = representing one independent variables (IV)

$\boldsymbol{\beta}_1$ SIZE = the coefficient of bank size

$\boldsymbol{\beta}_2$ LTA = the coefficient of loan to assets ratio

$\boldsymbol{\beta}_3$ IR = the coefficient of loan to inflation rate

$\boldsymbol{\beta}_4$ I = the coefficient of loan to interest rate

$\boldsymbol{\beta}_5$ GDP = the coefficient of loan to growth domestic product

E_{it} = error term

3.3 Variables of Study

In this research, the dependent variable selected is bank profitability which was measured based on the calculation of Return on Asset. On the other hand, the dependent variables selected are bank size, loan to assets ratio, inflation rate, interest rate, and gross domestic product.

3.3.1 Dependent Variables (DV)

In measuring the profitability of bank, there are two types of calculation that can be used which is the Return on Asset, (ROA) and the Return on Equity, (ROE). This study measured the profitability of bank based on the computation of the Return on Asset, (ROA). This is because the calculation of ROA is the most widely accepted basis in determining the internal standing of banks internationally (Desa, 2003). In addition, the calculation of ROA involves the equity numbers since asset acquisition is financed by a combination of equities and debts.

Furthermore, according to Desa, (2003) the calculation of Return on Asset, (ROA) is often used as measure to determine the proficiency of the bank management body in managing the capital for acquiring a greater profit. The formula to calculate ROA is by dividing the total income after taxes with net assets. On the other hand, the formula to calculate ROE is by dividing the total income after taxes with net equity.

3.3.2 Independent Variables (IV)

There are five attributes of the independent variables studied in this research as measure to investigate the relationship of these variables with the bank profitability in Malaysia. Furthermore, these attributes are categories into two categories which are the internal and the external determinant variables. There are two independent variables under the category of internal determinant which is loan to asset ratio and bank size. For the external determinant, there are three independent variables under this category which are the Gross Domestic Product, (GDP), inflation and interest rate.

The measurement to proxy bank size is total net assets. This is because bank size refers to the capital of the bank where the difference between the assets and liabilities of bank is measures. Nonetheless, it represents the bank's value which is also known as the net worth of the bank to its respective investors. Moreover, the asset portion of a bank's capital is count as total assets.

On the other hand, the formula to calculate loan to asset ratio is expressed as total debts to total assets ratio. This can be measured by adding total short term debt with total long term debt and dividing it with total assets. The calculation shows the proportion of equity and debt of a bank. On the other hand, a higher debt to asset ratio signifies that the bank has been aggressively in financing its growth with debt. Nevertheless, this risk level is one of the benchmark uses by investors to determine the bank value.

Inflation rate on the other hand is proxy to Consumer Price Index, (CPI) which is calculated by dividing Current Period Price of the Basket with Base Period Price of the Basket and multiplies it with 100. Furthermore, the formula to calculate interest rate is expressed by the equation of $A = P(1 + r)^t$ where A is the total accrued amount of the principal plus interest; P is the principal amount; r is the rate of interest per year; and t is the time period involved in months or years.

Furthermore, by definition, Gross Domestic Product, (GDP) is the value of total output of the goods and services by a nation for an annual period of time (Ali, et al., 2011). The formula to calculate gross domestic product is expressed by the equation of GDP = C + G + I + NX where C is the total accrued amount of consumer spending in a nation's economy; G is the sum of government spending; I is the total accrued amount country's investment; and NX is the country's total net exports, calculated as total exports minus total imports. Table 3.3 gives summary on the terminology of each independent variable studied in this research.

Table 3.3
Summary of terminology of the independent variables

No.	**Independent Variables**	**Terminology**	**Symbol**
1	Bank Size	• Logarithm of the total assets of each bank. • Bank Size = Total Net Assets	SIZE
2	Loan to Assets Ratio	• Logarithm of the total loans of asset ratios each bank. • Total Debt to Total Asset = <u>Short Term Debt + Long Term Debt</u>	LTA

		Total Assets	
3	Inflation Rate	• Annual percentage change of consumer price index. • Consumer Price Index = $\left(\frac{\text{Current Period Price of the Basket}}{\text{Base Period Price of the Basket}} \times 100\right)$	IR
4	Interest Rate	• Annual percentage rate on consumer goods. • $A = P(1 + r)^t$	I
5	Gross Domestic Product	• Logarithm of the Income Approach. • $GDP = C + G + I + NX$	GDP

3.4 Theoretical Framework

The determinant of bank's profitability is studied based on the internal and external factor. Internal factors would be the controllable variables which are the bank size and loan to asset ratio. In contrast, external factors would be the environmental factors where the bank management bodies does not has any direct control which are the interest rate, inflation rate, and Growth Domestic Product, (GDP). The internal and external determinants are expected to influence the calculation of Return on Asset, (ROA). For example, a bigger bank size is in better position to obtain bigger return and expand the market size while diversified its portfolio. The higher return can create more opportunity for the bank to grow.

In this study, the five independent variables are classified as internal factors which is bank size, loan to asset ratio and external factors which is interest rate, inflation rate, and gross domestic product. This study aims to investigate the significant relationship between all five independent variables with the dependent variable (bank profitability; measure by the calculation of Return on Asset, (ROA). The interrelationship between internal and external determinant factors towards bank profitability is the main objective of study. Figure 3.1 shows the theoretical framework of this research.

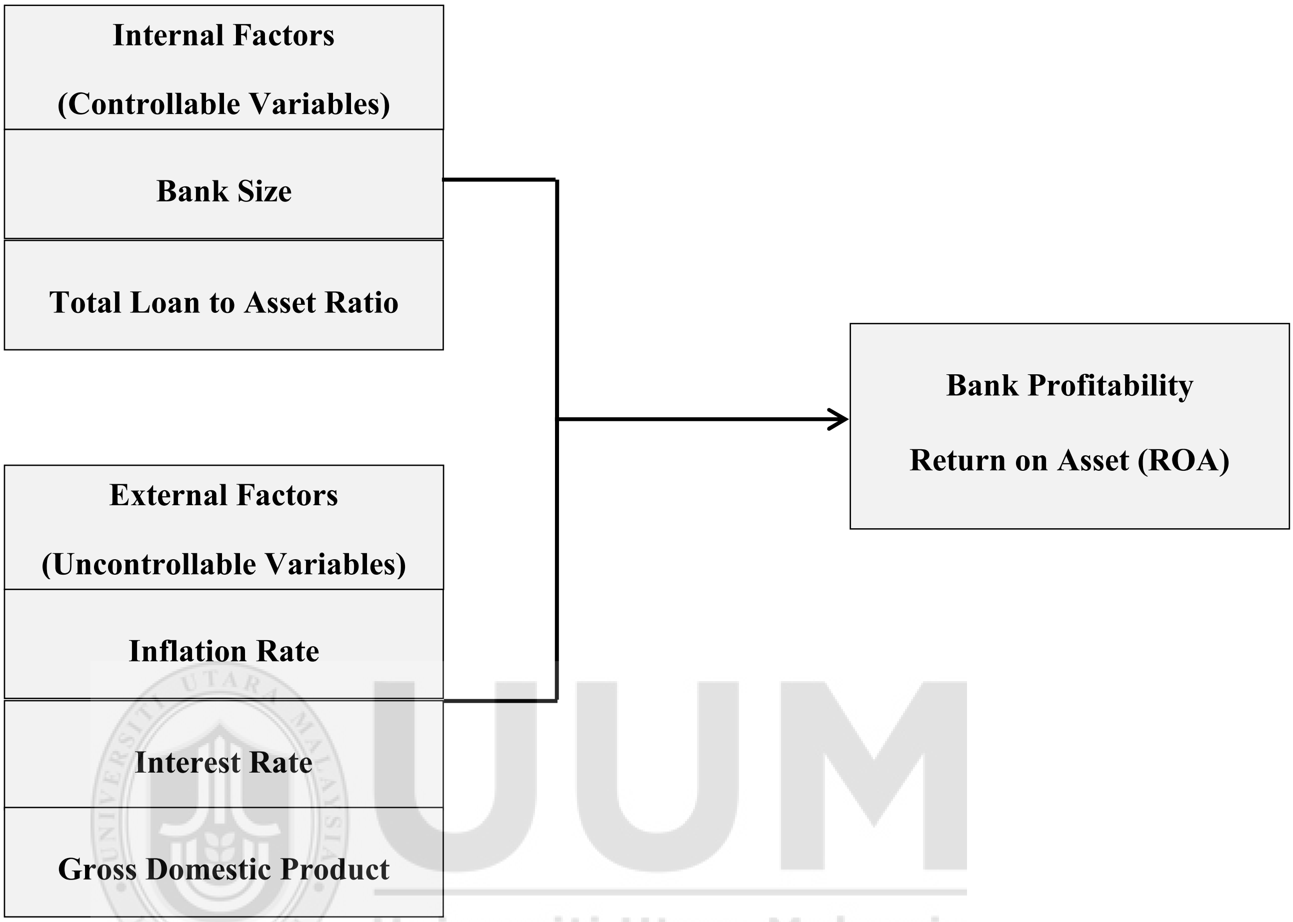

Figure 3.1
Theoretical Framework

3.5 Hypothesis of Study

There are five main hypothesis studied in this study that aims to investigate the significant relationship between five independent variables (Bank Size, Total Loan to Assets, Gross Domestic Product, (GDP), Inflation Rate and Interest Rate) with one dependent variable (Bank Profitability).

3.5.1 Bank Size

Research performed by Boyd and Runkle, (2013), on study related to size and performance of banking firms which found that there is no significant relationship between the size and the profitability of the banks. On contrary, study conducted by Alper and Anbar, (2011) in Turkey found insignificant relationship between bank size and bank profitability. Therefore, this study draft bank size hypothesis as follow:

H1: There is significant relationship between bank size and the return on asset of foreign commercial banks in Malaysia.

3.5.2 Loan to Asset Ratio

Research conducted by Gul, et al, (2011) on factors affecting bank profitability in Pakistan states that there is significant relationship between loans to asset ratio but it does not affect the profitability of the bank. Similarly, study conducted by Angbazo, (2014) found that there is significant relationship between loans to asset ratio but it does not affect the profitability of the bank. Therefore, this study draft loan to asset ratio hypothesis as follow:

H2: There is significant relationship between loan to asset ratio and the return on asset of foreign commercial banks in Malaysia.

3.5.3 Interest Rate

A research conducted by Boahene, et, al., (2012) in Ghana reported that there is significant relationship between interest rate and the profitability of selected banks. On the other hand, a study performed by Hanweck and Kilcollin, (2014) on bank profitability and interest rate risk stated that interest rate significantly influence return on asset of bank. Therefore, this study draft interest rate hypothesis as follow:

H3: There is significant relationship between interest rate and return on asset of foreign commercial banks in Malaysia.

3.5.4 Inflation Rate

A study conducted by Bolt, et, al., (2012) on bank profitability during recessions reported that there is significant relationship between the influence of inflation rate on the profitability of bank. Similarly, a study performed by Gul, et, al., (2011) on factors affecting bank profitability in Pakistan mentioned that inflation rate is one of the most significant factor influencing the profitability of bank. Therefore, this study draft inflation rate hypothesis as follow:

H4: There is significant relationship between inflation rate and return on asset of foreign commercial banks in Malaysia.

3.5.5 Growth Domestic Product, (GDP)

A research conducted by Aremu, et, al., (2013) in Nigeria found that there is significant relationship between Growth Domestic Product, (GDP) and the profitability of commercial banks. On the other hand, a study performed by Athanasoglou, et, al., (2008) found that there is significant relationship between Growth Domestic Product, (GDP) and the profitability of banks. Therefore, this study draft gross domestic product hypothesis as follow:

H5: There is significant relationship between Growth Domestic Product, (GDP) and return on asset of foreign commercial banks in Malaysia.

Table 3.4: This explains on alternative hypothesis used in this study.

Summary of Hypothesis

Hypothesis	Relationship
H1	There is significant relationship between bank size and the return on asset of foreign commercial banks in Malaysia.
H2	There is significant relationship between loan to asset ratio and the return on asset of foreign commercial banks in Malaysia.
H3	There is significant relationship between interest rate and return on asset of foreign commercial banks in Malaysia.
H4	There is significant relationship between inflation rate and return on asset of foreign commercial banks in Malaysia.
H5	There is significant relationship between Growth Domestic Product, (GDP) and return on asset of foreign commercial banks in Malaysia.

3.6 Conclusion

Briefly, the research methodology is the main aspect discussed in this chapter. The research design, sample and sampling technique is among the main section discussed in this chapter. Moreover, as a measure to ensure this research is conducted in a systematic manner, the aspect of research approach was also discussed in this chapter. Furthermore, since this research utilised secondary data as the main source of information in deriving the result of study, a detailed discussions on the data collection and analysis method was also mentioned in this chapter.

Measurement used in quantifying the data is significant since it influence the result of study. Therefore, a detailed discussion on missing value, outliers, normality analysis, multicollinearity analysis, linearity analysis, correlation analysis, and regression analysis is discussed in this chapter. In addition, as to provide a more in depth information pertaining to this research, the research framework is also discussed.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

Chapter four presents the outcome of analysis and discussion on the significant relationship between the Independent Variables (IV) which are the bank size, loan to assets ratio, Gross Domestic Product, (GDP), inflation rate and interest rate, with the Dependent Variable (DV) which is bank profitability; measure by the calculation of Return on Asset, (ROA) is discussed thoroughly in this chapter. Briefly, the result of analysis is derived from the computation of ten (10) years of series data from the year of 2007 to 2016 related to the ten (10) foreign commercial banks operating in Malaysia.

4.2 Data Analysis

4.2.1 Testing for Missing Value

In this research, the missing value test conducted and based on a thorough observation process conducted by the researcher, it is found that the data is complete collected. This is relating to the fact that this research utilise secondary sources as the main source of data which were collected from published report of each foreign commercial bank.

Table 4.1
Statistic for Missing Value

		BANK SIZE	LOAN TO ASSET RATIO	INFLATION RATE	INTEREST RATE	GROSS DOMESTIC PRODUCT	RETURN ON ASSET
N	Valid	100	100	100	100	100	100
	Missing	0	0	0	0	0	0

4.2.2 Testing for Serial Correlation

Table 4.2
Summary for Correlation Test

Model	R	R Square	Adjusted Square	Std. Error of the Estimate	Durbin Watson
1	.423[a]	.179	.148	.0196782	1.653

a. Predictors: (Constant Variables), BANK SIZE, LOAN TO ASSET RATIO, INFLATION RATE, INTEREST RATE, GROSS DOMESTIC PRODUCT

b. Dependent Variable: RETURN ON ASSET

According to the rule of thumb associate with the Durbin Watson Test, a normal statistic range between 1.5 - 2.5 points. The result indicates 1.653 which is within the range of a normal statistic. Therefore, the researcher concludes that there is no auto correlation exists in the regression analysis.

4.2.3 Testing for Linearity

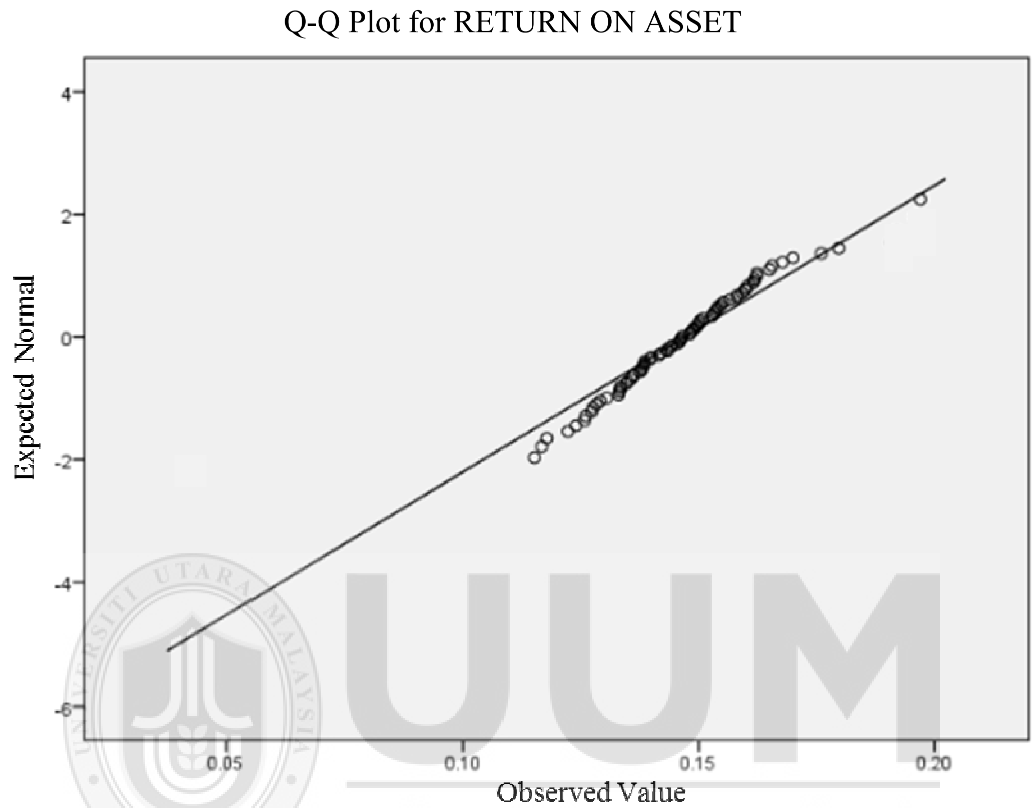

Figure 4.1
Q Plot for Linearity Test

In this research, the Q plot is used as measure to determine the linearity of data. This method is significant to estimate the percentile or probabilities on the gathered data. According to the rule of thumb, a straight line will be formed if both set of data is equally distributed. The analysis reveals that the majority of the scattered plot is above 0.10 within the observed value. Nonetheless, based on this analysis the researcher concludes that the relationship for return on asset is linear. Therefore, in relating with the error term, it is reviewed as normally distributed.

4.2.4 Testing for Normality

Table 4.3
Summary of Normality Test

Variable	Skewness	Kurtosis
Return on Asset	1.017	1.229
Bank Size	1.206	1.018
Loan to Asset Ratio	0.958	-0.287
Inflation Rate	-0.817	-0.912
Interest Rate	1.293	1.129
Gross Domestic Product	-0.917	5.655

According to the rule of thumb, the statistic is considered as normally distribute if the value of skewness is (+/-) 2 and the value of kurtosis is within the range of -2 to 2. Based on table 4.4 all variables skewness value is within the range of -2 to 2. Meanwhile, kurtosis value for variables are in normal range except GDP at 5.655. Therefore, based on these computed values the researcher concludes that the statistic is normally distributed from the perspective of skewness and kurtosis value.

4.2.5 Testing for Multicollinearity

Table 4.4
Summary of Multicollinearity Test

Model		Collinearity Tolerance	Statistics VIF
1	BANK SIZE	.582	1.719
	LOAN TO ASSET RATIO	.321	3.113
	INFLATION RATE	.618	1.618
	INTEREST RATE	.438	2.281
	GROSS DOMESTIC PRODUCT	.490	2.043

a. Dependent Variable: RETURN ON ASSET

The rule of thumb associates with multicollinearity is that the value of VIF must be less than 10 and the value of tolerance must be higher than 0.1. Based on the analysis computed, the tolerance value for all five independent variables is higher than 0.1. Similarly, the VIF value for all five independent variables is less than 10. Therefore, the researcher concludes that there is no multicollinearity exists between variables in the regression model used for this study purposes. In other words, the data for each independent variable is not correlated to each other and therefore each factor influences the dependent variable separately.

4.2.6 Descriptive Statistics

Table 4.5

Summary of Descriptive Statistics

	BANK SIZE (%)	LOAN TO ASSET RATIO (%)	INFLATION RATE (%)	INTEREST RATE (%)	GROSS DOMESTIC PRODUCT (%)	RETURN ON ASSET (%)
Mean	4.3834	8.3361	2.4543	4.7992	4.7471	1.1243
Median	4.2957	7.7322	2.6421	4.7031	4.6612	1.1436
Std. Deviation	0.6177	4.1978	1.5627	1.4338	2.7215	0.5395
Minimum	3.2033	6.7721	2.1029	3.3028	4.3451	0.9844
Maximum	5.3881	8.6922	3.1811	6.1033	4.9773	1.2265

The descriptive analysis helps to determine the pattern of data set. For this research purposes, the descriptive analysis covers the aspect of mean, median, Standard Deviation, (SD), minimum, and maximum value. Based on the analysis, the mean value for bank size is 4.3834 % shows that in average every foreign commercial banks in Malaysia holds total asset of RM438.34 million. On the other hand, the computed mean value for loan to asset ratio is 8.3361 % shows that in average every foreign commercial banks in Malaysia holds total loan of asset ratio worth RM833.61 million.

In terms of inflation rate, the computed mean value is 2.4543 % while the standard deviation is 1.5627 %. Furthermore, the mean value for interest rate is 4.7992 % shows the average percentage rate on consumer goods in Malaysia. For gross domestic product, the mean value is 4.7471 % while the Standard Deviation, (SD) is 2.7215 %.

4.2.7 Correlation Analysis

Table 4.6
Summary of Correlation Analysis

		RETURN ON ASSET	BANK SIZE	LOAN TO ASSET RATIO	INFLATION RATE	INTEREST RATE	GROSS DOMESTIC PRODUCT
RETURN ON ASSET	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	100					
BANK SIZE	Pearson Correlation	0.365(***)	1				
	Sig. (2-tailed)	0.000					
	N	100	100				

LOAN TO ASSET RATIO	Pearson Correlation	0.321(***)	-0.392(***)	1			
	Sig. (2-tailed)	0.000	0.000				
	N	100	100	100			
INFLATION RATE	Pearson Correlation	0.110	0.062	-0.067	1		
	Sig. (2-tailed)	0.197	0.469	0.434			
	N	100	100	100	100		
INTEREST RATE	Pearson Correlation	0.206(**)	-0.730(***)	0.386(***)	-0.010	1	
	Sig. (2-tailed)	0.015	0.000	0.000	0.905		
	N	100	100	100	100	100	
GROSS DOMESTIC PRODUCT	Pearson Correlation	0.004	-0.086	-0.012	0.311(***)	-1.225	1
	Sig. (2-tailed)	0.962	0.310	0.891	0.000	0.914	
	N	100	100	100	100	100	100

Remark:

***, ** mean correlation is significant at the 0.01 level (2-tailed) and at the 0.05 level (2-tailed) respectively.

Based on the analysis, this study found that bank size is significant at the 0.01 level with return on asset at the value of 0.365. Similarly, loan to asset ratio is significant at the 0.01 level with return on asset at the value of 0.321. On the other hand, interest rate is significant at the 0.05 level with return on asset at the value of 0.206. However, loan to asset ratio is negatively correlated with bank size. This research also establishes that inflation rate and gross domestic product is insignificant with return on asset. Nevertheless, the relationship between GDP and inflation rate is positively correlated.

4.2.8 Regression Analysis

Table 4.7

Summary for Regression Analysis

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	0.591[a]	0.349	0.315	0.44652

The adjusted square value is 0.315 shows that 31.5 % of the difference in return on asset are influenced by the five Independent Variables, (IV) studied which is bank size, loan to asset ratio, interest rate, inflation rate, and gross domestic product. It also shows that 68.5 % are other variables that influence bank profitability which were not mentioned in this study.

Table 4.8
ANOVA for Regression Analysis

Model		Sum of Square	df	Mean Square	F	Sig.
1	Regression	.006	3	.003	5.718	.001[b]
	Residual	.028	75	.000		
	Total	.034	78			

The primary aim of ANOVA test is to ascertain the reliability of the model chosen for this study purposes. The F value is 5.718 and this value is considered as high which shows that the model chosen is a suitable model for this research. Moreover, model that have the significant value of lesser than 0.05 shows the result of a good model. In this study, the significant value is 0.000 which is less than 0.05 and therefore this research concludes that the chosen model is suitable for analysing the profitability of foreign commercial banks operating in Malaysia.

Table 4.9
Summary of Coefficients for Regression Analysis

		Coefficients		
Model		Beta	t	Sig.
1	BANK SIZE	4.915***	3.075	.003
	LOAN TO ASSET RATIO	0.043***	3.983	.000
	INFLATION RATE	0.003	0.120	.905
	INTEREST RATE	0.382*	1.171	.075
	GROSS DOMESTIC PRODUCT	0.009	0.553	.581

Note:
*, **, and *** denote significance levels at 10%, 5%, and 1% respectively. The result of analysis is based on the calculation of the weighted least squares regression technique.

Among all variables, bank size has the highest beta value of 4.915 and therefore is deem as the key factor that influence the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia. Moreover, bank size is significance at 1% level which means that an increase of 1% of the foreign commercial banks size in Malaysia leads to an increase of bank profitability by 4.915%. The result of analysis also shows that bank size have a positive and significant relationship with Return On Asset, (ROA). This can be interpreted with the benefits from economic of scales which helps foreign commercial banks in Malaysia to gain higher profit. This result is supported by the research perform by Ali, et al., (2011), which concluded that bank size is one of the factors influencing the profitability of bank in Pakistan. Like wise, the research performed by Sufian and Akbar, (2012) mentioned that the origins of bank does not influence the performance but rather its the size of the bank that matter. Therefore, this research concludes that big size banks gain more profits than small size banks.

Next, loan to asset ratio is another determinant factor that influence the Return On Asset, (ROA) of foreign commercial banks operating in Malaysia. This research found that the significance value of loan to asset ratio is significance at 1% level with return on asset. However, among all three variables that have significance relationship with return on asset, loan to asset ratio has the least strength of correlation with return on asset with the beta value of 0.043. In other words, an increase of 1% of the total loans of asset ratios of the foreign commercial banks in Malaysia leads to an increase of bank profitability by 0.043%. Therefore this research concludes that loan to asset ratio have positive and significant relationship with Return On Asset, (ROA). This means that a well capitalised foreign commercial bank in Malaysia is able to hold financial risk by giving out more loan while spending lesser cost for external funding and therefore increase the profits of the bank. This result is supported by study conducted by Boahene, et al., (2012), in Ghana which have proven that well capitalised bank can achieve higher profit. Similarly, a research performed by Dietrich and Wanzenried, (2009) proposed loan to asset ratio as an important determinant attribute of banks profitability.

Interest rate is another bank specific determinant factor that is significance at 10% level with return on asset. This research found the significance value of 0.075 which means 7.5 %. Next, the beta value for interest rate is 0.382 which means that the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia will increase by 0.382 % with an increase of 1 % interest rate. Therefore, this study concludes that interest rate have significant and positive relationship with the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia. One of the sources of income for bank is through interest rate. This fact is supported by Hanweck and Kilcollin, (2014) which stated that interest rate is an important contributing factor towards the profitability of a bank. Similarly, Rao and Lakew, (2012), states interest rate as one of the determinants of profitability for commercial bank operating in developing countries.

However, the significance value of inflation rate is 0.905 and therefore the relationship between inflation rate and the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia is not significant. Similarly, the significance value of gross domestic is 58.1% and therefore the relationship between GDP and return on asset is insignificant. Thus, this study suggested that the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia is influenced by bank-specific determinants which is bank size, loan to asset ratio, and interest rate while the macroeconomic determinants which is GDP and inflation rate are considered as not significant towards return on asset of the foreign commercial banks.

4.3 Conclusion

The results of the analysis computed via SPSS statistical software application have been discussed thoroughly in chapter four. Briefly, this research found that the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia is influenced by bank-specific determinants which is bank size, loan to asset ratio, and interest rate while the macroeconomic determinants which is GDP and Inflation rate are considered as not significant towards return on asset of the foreign commercial banks. The next chapter which is the final chapter will discuses the implications of study, recommendation for future study, and the conclusion of study.

CHAPTER FIVE

CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

5.1 Introduction

In chapter five, a discussion on research objectives and hypotheses assessment is conducted as a measure to evaluate the success completion of this research. Furthermore, recommendations for future study and implications of research are made based on the researcher experienced in completing this research. Finally, a conclusion of study is discussed to finalize entire paper.

5.2 Research Objectives Assessment

Briefly, this study is meant to examine the significant relationship between five factors which are bank size, loan to asset ratio, inflation rate, interest rate, and Gross Domestic Product, (GDP) with bank profitability which is measure based on the calculation of Return on Asset, (ROA). The first research objective is to examine Independent Variables (IV) relationship toward Dependent Variable (DV). This study found that bank size and loan to asset ratio is significant at the 0.01 level with return on asset while interest rate is significant at the 0.05 level with return on asset. Furthermore, this research also found a positive relationship between these three variables which are bank size, loan to asset ratio, and interest rate with bank profitability. On the other hand, this study found that the relationship of inflation rate and gross domestic product is insignificant with return on asset.

The second research objective is to investigate key factor that significant related to foreign commercial banks profitability in Malaysia. This research established that among three variables that have significant relationship with return on asset, bank size has the highest beta value of 4.915 and therefore is deem as the key factor that influence the Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia. The second highest factor influencing the Return On Asset, (ROA) of foreign commercial banks operating in Malaysia is interest rate with the beta value of 0.382. On the other hand, the third key factor is the loan to asset ratio with the value of 0.043.

Finally, this research concludes that the most significant factor in determining the profitability of foreign commercial banks in Malaysia is bank size. Nevertheless, this research suggested that the Return On Asset, (ROA)of the foreign commercial banks operating in Malaysia is influenced by bank-specific determinants which is bank size, loan to asset ratio, and interest rate while the macroeconomic determinants which is GDP and Inflation rate are considered as not significant towards Return On Asset, (ROA) of the foreign commercial banks operating in Malaysia.

5.3 Policies Implication

Based on the completed research, it is found that this research may impact three segments which are in term of academic purposes, industry players, and policy makers. First, in relation to academic purposes, this study has helped to narrow the gap of knowledge associating with the study on the profitability of foreign commercial bank based on five factors which is bank size, total loan to asset ratio, inflation rate, interest rate, and Gross Domestic Product, (GDP). The literature review gathered and synthesize by this research is significant for other academicians and / or students to further study on the scope of study mentioned in this research. Moreover, since there is limited number of researches conducted in Malaysia in relation to the study of bank profitability, the result of this study is significant for other students and / or academicians to use as referral.

Secondly, in relation to the industry players which in this research refer to the banking industry, bank profitability (Return on Asset, (ROA)) is a significant attribute in evaluating the success or failure of a management body. Thus, the result of this research which focused on analysing factors that may or may not influence bank profitability can help the industry players to gain a much deeper insight regarding the matter. Nevertheless, through completion of this research, industry player may use this research as a new updated point of referral in deciding strategy to improve bank profitability. This is significant particularly in turbulence economic situation such as during the present time. The industry player may focus more or less on specific attribute to increase bank profitability since this research has helped to provide an overview on the most and least significant factors influencing bank profitability.

Thirdly is in relation to the policy makers. Policies and guidelines must be updated from time to time depending on current economic situation. Since this research is conducted in present time which is on the year of 2018, the result of empirical study provide by this research can help the policy makers to make a better decision on current policies and guidelines. Nevertheless, since this research is focused on foreign commercial banks operating in Malaysia, the result of the analysis is more influence on the policy makers concerning foreign commercial banks in Malaysia.

5.4 Recommendations for Future Study

Based on the completed study, the researcher would like to make recommendations for other academicians or students who might be interested to further study in relation with bank profitability. First is in term of the independent variables of study. In this research five Independent Variables; (IV) was used in determining bank profitability based on the evaluation of Return on Asset, (ROA). For future researches, it is recommended to add more independent variable such as liquidity risk, capital adequacy, non-performing loans, and cost efficiency. By utilising different set of independent variables, the study will produce different result of analysis and this can help to provide a more detailed insight regarding factors influencing bank profitability in Malaysia.

Second, this research focused on examining the Return on Asset, (ROA) of the foreign commercial banks operating in Malaysia. However, as of 2018, there are twenty eight commercial banks operating in Malaysia. Therefore, for future study it is suggested to study bank profitability of both local and foreign commercial banks in

Malaysia. This is because the consumer's preference on local and foreign commercial banks might be different and thus the result of that particular study may provide a cleared insight regarding the matter.

Third, is in relation to the sample size. This study utilise the sample size of ten foreign commercial banks for the period of ten years which is from the year of 2007 to 2016. The total sample size of this research is 100. For future study, it is recommended to utilise a larger sample size and longer period of time frame. By doing this, the researcher may find a more precise study on the factors influencing bank profitability since a larger sample size can help to provide a much detailed and accurate result of study.

Fourth, is in relation to the country that the commercial banks currently operating. In this research the focused is on foreign commercial banks operating in Malaysia. However, there is limited number of researches and studies conducted in the less developed countries such as in the Vietnam, Laos, Myanmar, Timor Leste, and others to mention. Thus, by conducting a study in these less developed nations, the researcher may be able to found a different output regarding factors influencing the Return on Asset, (ROA) of the foreign commercial banks.

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Appendix A: *The list of local and foreign commercial bank in Malaysia*

No	Name	Ownership
1	Affin Bank Berhad	Local
2	Alliance Bank Malaysia Berhad	Local
3	AmBank (M) Berhad	Local
4	BNP Paribas Malaysia Berhad	Foreign
5	Bangkok Bank Berhad	Foreign
6	Bank of America Malaysia Berhad	Foreign
7	Bank of China (Malaysia) Berhad	Foreign
8	Bank of Tokyo-Mitsubishi UFJ (Malaysia) Berhad	Foreign
9	China Construction Bank (Malaysia) Berhad	Foreign
10	CIMB Bank Berhad	Local
11	Citibank Berhad	Foreign
12	Deutsche Bank (Malaysia) Berhad	Foreign
13	HSBC Bank Malaysia Berhad	Foreign
14	Hong Leong Bank Berhad	Local
15	India International Bank (Malaysia) Berhad	Foreign
16	Industrial and Commercial Bank of China (Malaysia) Berhad	Foreign
17	J.P. Morgan Chase Bank Berhad	Foreign
18	Malayan Banking Berhad	Local
19	Mizuho Bank (Malaysia) Berhad	Foreign
20	National Bank of Abu Dhabi Malaysia Berhad	Foreign
21	OCBC Bank (Malaysia) Berhad	Foreign

22	Public Bank Berhad	Local
23	RHB Bank Berhad	Local
24	Standard Chartered Bank Malaysia Berhad	Foreign
25	Sumitomo Mitsui Banking Corporation Malaysia Berhad	Foreign
26	The Bank of Nova Scotia Berhad	Foreign
27	The Royal Bank of Scotland Berhad	Foreign
28	United Overseas Bank (Malaysia) Bhd.	Foreign