DETERMINANTS OF ISLAMIC AND CONVENTIONAL BANKS PROFITABILITY IN MALAYSIA

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DETERMINANTS OF ISLAMIC AND CONVENTIONAL BANKS PROFITABILITY IN MALAYSIA

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ABSTRACT

This study investigates the determinants of Islamic and conventional banks profitability of 30Malaysian commercial banks over the period from 2007 to 2012. Using the Ordinary Least Square (OLS), the result shows that capital significantly influences the return on assets (ROA) of Islamic and conventional banks in Malaysia. This implies that strong capital base is important in determining the profitability of commercial banks in Malaysia. For macroeconomic variables, inflation determines the profitability of Malaysian conventional banks only but not Islamic banks. As for the interest rate, which is measured by base lending rate (BLR), the findings demonstrate that BLR positively and significantly influences the ROA of the full sample. This study also controls for the effect of 2008 global financial crisis on the profitability of Malaysian commercial banks by introducing CRISIS dummy in the model. The result indicates that Malaysian bank profitability is not affected by the 2008 global financial crisis.

KEYWORDS: Bank profitability, Islamic bank, Conventional bank, Malaysia

ABSTRAK

Kajian ini mengkaji faktor-faktor penentuan keberuntungan untuk perbankan islam dan perbankan konvensional dengan menggunakan 30 sampel dari bank perdagangan di Malaysia dari tahun 2007 sehingga 2012. Dengan menggunakan teknik regrasi *Ordinary Least Square*, keputusan menunjukkan bahawa modal mempunyai hubungan yang signifikan dengan keberuntungan kepada perbankan islam dan perbankan konvensional. Ini menunjukkan bahawa asas modal yang kukuh adalah penting dalam menentukan keberuntungan bank perdagangan di Malaysia. Untuk faktor luaran, kadar inflasi menentukan keberuntungan untuk perbankan konvensional di Malaysia, dan tidak kepada perbankan islam. Kadar faedah yang ditentukan oleh kadar asas pinjaman menunjukkan hubungan yang positif dan dan signifikan dalam mempengaruhi keberuntungan kepada perbankan konvensional dan perbankan islam. Kajian ini juga mengkaji kesan krisis kewangan pada tahun 2008 ke atas keberuntungan bank perdagangan di Malaysia dengan memperkenalkan *CRISIS dummy* di dalam model. Keputusan menunjukkan bahawa kadar keberuntungan bank di Malaysia tidak dipengaruhi oleh krisis kewangan pada tahun 2008.

KATA KUNCI: Keuntungan bank, perbankan islam, perbankan konvensional, Malaysia.

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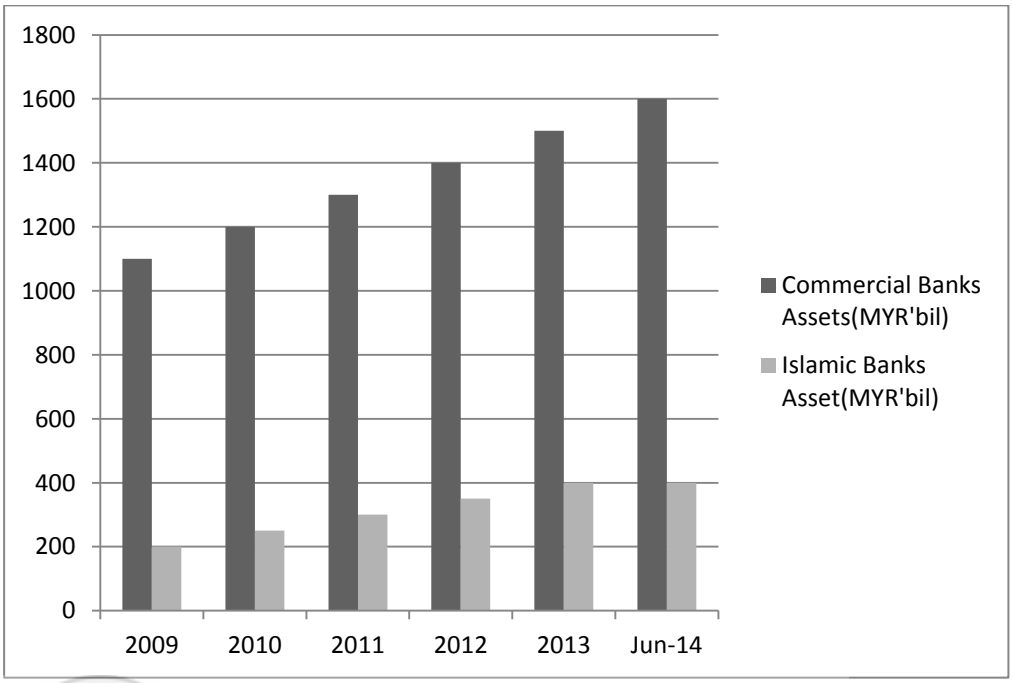
1.1 Background of the study

The banking sector is an important source of financing for the domestic economy. The development of the banking system, especially for domestic banking institutions is vital to facilitate and support the economic growth and transformation process. According to Anthanasoglou *et al.* (2005), a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Moreover, Ramlall (2009) also stated that a level and sound profitable banking sector is prerequisite for financial stability after the 2008 US Subprime crisis which had affected many countries worldwide.

Malaysia is one of the unique countries which operate a dual banking where the Islamic banking system operates in parallel with the conventional banking system (Country Report, 2012). The dual financial system has proved to be viable as more competitive and sophisticated Islamic financial products have been introduced into the Islamic banking industry and gained popularity and even preference amongst the customers (Muda and Jalil, 2007).Figure 1.1 shows commercial bank asset and Islamic bank asset from the year 2009 until mid-June 2014. It shows that the Islamic bank asset has double increased from the year 2009 until mid- 2014.

Figure 1.1-Commercial and Islamic bank asset for the year 2009 to mid-June 2014



(Source: www.bnm.gov.my)

In Malaysia, banks are regarded as dominant financial institutions thus, their health condition is crucial as it will give an effect to the general health of the economy (Suffian, 2009). Furthermore, the landscape of Malaysian banking sector has undergone a major structural change in the era of globalization with various liberalization measures being introduces during the last decade (Omar et. al 2006). Therefore, having the knowledge on factors influencing commercial bank's profitability is not only important but it is also essential in stabilizing the economy as well as for the benefits of other parties involves such as the government, financial authorities and others stakeholders (Jamal *et al.* 2012).

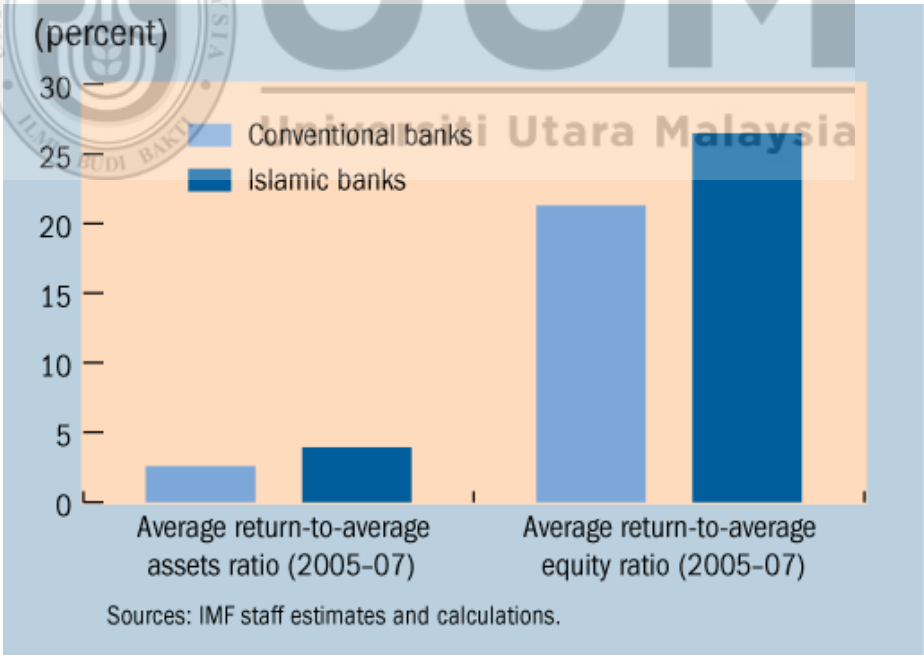
According to Guru, Staunton and Balashanmugam (2002), in Malaysia, the banking sector had experience immense and impressive structural changes in order to remain more competitive in the Asian financial industry and to be more resilient to

various external shocks. In recent times, research has focused on the impact of external macroeconomics factors on banks performance and profitability determinants.

1.2 Financial Crisis on 2008

IMF Survey Magazine, 2010, reports that the Islamic banks, on average showed the stronger resilience during the global financial crisis. IMF Survey Magazine, 2010, examines the effects of the financial crisis on Islamic and conventional banks from eight countries that are Bahrain, Jordan, Kuwait, Malaysia, Qatar, Saudi Arabia, Turkey and the United Arab Emirates. The results are shown in Figure 1.2 and Figure 1.3.

Figure 1.2-Average of ROA and ROE for Islamic and conventional banks for the year 2005 to 2007

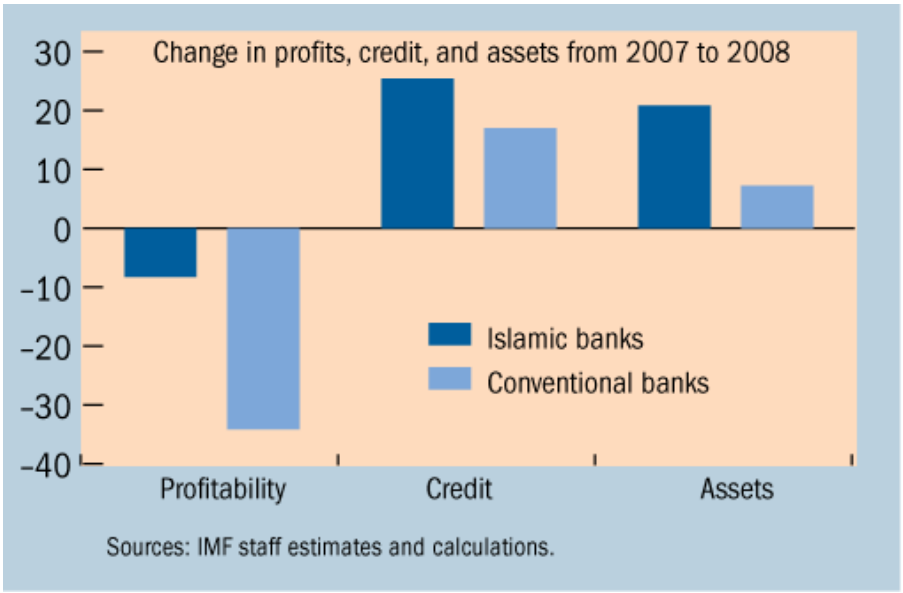


Source: IMF Survey Magazine, 2010

Figure 1.2 shows that the Islamic banks are more profitable than conventional banks for the period 2005-2007. The ROA of Islamic banks is about 4 percent while the conventional bank is about 3 percent. ROE for Islamic banks is 27 percent while 22 percent for the conventional banks. The return on asset and return on equity are reported because both are the most important measures to evaluate the bank performance.

Figure 1.3 shows the initial crisis effect during the global financial crisis where the Islamic bank profitability decline about 9 percent, and conventional banks profitability decline about 35 percent. According to IMF Survey Magazine for the year 2010, this happened because Islamic banks have smaller investment portfolios, lower leverage, and adhere to Shariah principles, that avoided Islamic banks to invest or finance in the kind of instruments that fully affected by the global financial crisis like conventional banks.

Figure 1.3-Change in Profits, Credit risk and Asset for Islamic and Conventional Banks for the year 2007 to 2008



Source: IMF Survey Magazine, 2010

1.3 Problem Statement

There are a number of studies investigate the determinants of bank profitability in Malaysia, either Islamic or conventional banks (Wasiuzzaman *et al.*, 2010; Idris *et al.*, 2011; Muda *et al.*, 2013;Abduh and Idress, 2013;Guru *et al.*,2002;Jamal *et al.*, 2012; and Vejzagic *et al.*, 2013).

Idris *et al.*, (2011) and Muda *et al.*, (2013) focused on the bank-specific determinants of Islamic bank profitability while,in contrast, Guru *et al.*, (2002) focusedon internal and external determinants of conventional bank profitability in Malaysia. Jamal *et al.*, (2012) and Vejzagic *et al.*, (2013) concluded that macroeconomic factors determined the commercial banks profitability in Malaysia.Idris et al (2011) and Abduh and Idress (2013) concluded that only bank size is significant in determining Islamic bank profitability in Malaysia. Wasiuzzaman *et al.* (2010) and Abduh and Idress (2013) suggested that inflation has a significant and positive impact on Islamic bank profitability. Jamal *et al.* (2012) and Vejzagic *et al.* (2013) in their studies found that interest rate did not influence the conventional bank profitability. Lastly, Vejzagic *et al.* (2013) in their study find that the real GDP significantly affects conventional bank profitability in Malaysia

Hasan et al (2010), in their paper examined the performance of Islamic banks and conventional banks during the recent global crisis by looking at the impact of the crisis on profitability, credit risk and asset growth and external ratings in a group of countries that is Saudi Arabia, Bahrain, Kuwait, UAE, Qatar, Jordan, Turkey and Malaysia. The finding suggests that the Islamic banks perform better than those conventional banks during the financial crisis. However, such a comparison would not lead to reliable conclusions about financial stability and the resilience of the Islamic

banking sector because it would not allow for appropriate control for varying conditions across financial systems in countries where Islamic banks operate. For example, this comparison might not reflect the moderate impact of the crisis on the GCC [Gulf Cooperation Council], Jordan, and Malaysia.

The mixed results pertaining to the determinants of bank profitability in the aspect of internal and external factors, as well as the difference in nature of operations between Islamic and conventional banks, have triggered interesting questions. As Islamic banks differ from conventional banks in the aspect of Shariah compliance, are the effects of internal and external determinants on bank profitability differs between the Islamic bank and conventional banks? In addition, the primary difference between Islamic and conventional banks is the absence of interest (*riba*) in Islamic banking operations. Does interest rate determine the Islamic banks profitability in this study?

This study differs from the existing literature in 2 ways. Firstly, most of the existing literature focuses on either conventional or Islamic banks without combining both in the analysis. Secondly, very few studies analyze the performance of Islamic and conventional bank profitability in Malaysia during the global financial crisis from the year 2007 until 2009.

1.4 Research Questions

1. Do bank-specific determinants such as capital, liquidity, credit risk, and size affect the profitability of Islamic and conventional banks in Malaysia?

2. Do macroeconomics determinants such as GDP, inflation, and interest rate affect the profitability of Islamic and conventional banks in Malaysia?

3. Does the 2008 global financial crisis affect the profitability of Islamic and conventional banks in Malaysia?

1.5Research Objective

1. To examine the impact of bank-specific factors such as capital, liquidity, credit risk, and size on Islamic and conventional bank profitability in Malaysia.
2. To examine the impact of macroeconomic factors such as GDP, inflation, and the interest rate on Islamic and conventional bank profitability in Malaysia.
3. To examine the impact of 2008 global financial crisis on Islamic and conventional bank profitability in Malaysia.

1.6 Significant of this study

First, this study provides empirical evidence on the determinants of bank-specific and macroeconomic variables towards Malaysian bank's profitability. This study provides the important variables that influence the Islamic and conventional banks profitability in Malaysia.

Secondly, this study provides the empirical evidence on the effect of interest rate on Islamic and conventional banks profitability in Malaysia. Hence, these findings will help banks management to strengthen the main determinants for a more effective and efficient management of banks profitability.

1.7 Scope of study

This study focuses on banks specific and microeconomic determinants of banks profitability for Islamic and conventional banks in Malaysia. This study employs 30 banks in Malaysia, that is 15 for Islamic and 15 for conventional, including the foreign bank. The period study is from the year 2007-2012.

Chapter Two: The Differences between Islamic and Conventional Banks

2.1 Introduction

Malaysia has emerged as the first country to implement a dual banking system where Islamic banking system operates side-by-side with the conventional banking system (Mokhtar *et al.*, 2006). However, Islamic banking is not confined to full-blown Islamic bank only, as conventional banks also offer Islamic financial products through Islamic windows. Ironical as it may sound; conventional banks have given Islamic finance a greater outreach through their extensive branch networks than Islamic banks themselves. This is indeed the case in Malaysia where 14 conventional banks have 1335 branches operating Islamic counters, compared to the 122 branches of Islamic banks in the country (Rosly *et al*. 2011).

2.2 Conventional Banks vs. Islamic Banks

According to Abd Rahman, (2012), Islamic banking operations are based on the Shariah foundation. Thus, all dealing, transaction, business approach, product feature, investment focus, and responsibility are derived from the Shariah law, which lead to the significant difference with conventional banking.

The conventional banking is essentially based on the debtor-credit riskor relationship between the depositors and the bank. The interest will be the charge due to the reflecting the opportunity cost of money. Abdul Gafoor (1995) also mentions that conventional banking operations are primarily based on interest. Banks receive money on interest and lend money on interest. This is prohibited in Islam. On the other hand, Rosly and Abu Bakar (2003) mention that the Qur'an prohibits the taking and receipts the interest while making trade and commerce permissible. The Qur'an

argued that interest constitutes an unfair business transaction as profits realized from loans are risk-free with no evidence of value-addition by lenders. This is an ethical concern. But although such concern for the general welfare in Islam proceeded personal self-interest, in no way it leaves the self into oblivion. The prohibition of interest is Islam's response to arrest social imbalances arising from the inequitable distribution of income created by the credit risk system. Although, the interest (*riba*) systems generates some benefits it is only confined to a limited few while the general public stands to bear the costs. In this way, the ethical factor namely justice (*'adl*) and cooperation (*ta'awun*) are the rationales behind the Qur'an prohibition of interest (*riba*).

The operations mode for both Islamic and conventional system also differs. The conventional banks are based on fully manmade principles while the Islamic bank is based on the principles of Islamic Shariah. Even though their aims are same, to maximize the profit, the Islamic bank will follow the Shariah restriction.

For the lending activity, the conventional banks will charge interest based on compounding interest, but Islamic banks apply the partnership principles. The conventional bank income from the lending money activity is fixed while the Islamic bank applies profit sharing and loss concept. The conventional bank will charge interest even the organization suffers losses by using the bank fund while the Islamic bank will share the losses based on the mode of finance used, *Mudharabah* or *Musharakah*.

The understanding about money also differs between conventional and Islamic bank. For the conventional bank, the money is a commodity besides medium of exchange and store of value. The money will be sold at higher price than the face

value, and also can be rented. On the other hand for the Islamic bank, the money is not a commodity as it is used as a medium of exchange and store value. It cannot be sold at a price that higher than its face value.

The most interesting aspect is Islamic banks pay *Zakat* while conventional banks are not.

Chapter Three: Literature Review

3.1 Introduction

This chapter discusses the previous study related to the determinants of banks profitability in Malaysia. It begins with literature for determinants of Islamic banks profitability, follows the literature for determinants of conventional banks profitability and lastly discusses previous studies related to the impact of financial crisis towards banks profitability.

3.2 Determinants on Islamic banks profitability

Bashir (2003) examines the profitability of Islamic banks in eight Middle Eastern countries between 1993 and 1998. This study indicates that high capital to asset ratio and larger loan to asset ratio interacted with GDP leads to higher profit margins. The results also suggest that the tax factors are much more important to measure the bank performance. In addition, inflation rates have a strong and positive impact to the bank performance measurement.

Wasiuzzaman *et al.* (2010) investigate Islamic bank profitability in Malaysia by analyzing data collected from 16 Islamic banks/windows. Overall, the findings suggest that capital and asset quality have an inverse relationship with bank profitability while the liquidity and operational efficiency have a positive relationship with bank profitability. Additionally, macroeconomic variables such as inflation and growth domestic product have positively influenced the bank profitability.

Idris (2011) examines the Islamic bank profitability in Malaysiaand concludes that only bank size is positively significant in determining bank profitability. The results suggest that the bank size is the most important factor in determining the profitability of the Islamic banking in Malaysia because the larger bank size will have

better access to the capital market, lower cost of borrowing and also can generate higher income.

Abduh and Idress (2013) investigate the impact of bank specific as well as industry-specific and macroeconomic indicators on Islamic bank profitability in Malaysia. The findings conclude that the bank size is vital in affecting bank profitability. In addition, financial market development and market concentration have a significant and positive impact in determining bank profitability. Lastly, from the microeconomic variables, inflation significantly influences Islamic bank profitability in Malaysia.

Muda *et al.* (2013) examine Islamic bank profitability in Malaysia using a sample of 17 Islamic banks for the year 2007-2010.They found that the loan ratio, deposit ratio, capital and reserve, and bank size have a positive impact on bank performance while other variables such as liquidity ratio, bank age, inflation, growth domestic products per capita, growth domestic product growth rate and concentration ratio do not influence bank profitability of Islamic bank in Malaysia.

Haron(2004) examines the effects of the factors that contribute towards the profitability of Islamic banks. In their study, they find that internal factors such as liquidity, total expenditures, and funds invested in Islamic securities, and the percentage of the profit- sharing ratio between the bank and the borrower of funds are highly correlated with the level of total income received by the Islamic bank. This study also finds that the interest rate, market share, thesize of the bank, funds deposited into current accounts, total capital and reserves, the percentage of profit-sharing between bank and depositors, and money supply also play a major role in influencing the profitability of Islamic bank.

In summary, the previous study for determinants of Islamic banks in Malaysia never discusses the influence of interest rate towards Islamic banks in Malaysia. Thus, this study will examine whether the interest rate can influence the profitability of Islamic banks in Malaysia.

Table 3.1: Summary for study on determinants of bank-specific and macroeconomic variables for Islamic bank

Author	*Bank specific*	*Macroeconomic determinants*	*Findings(Variables affected the bank profitability)*
Bashir (2003)	-Equity to Total Asset -Loans to Total Asset -None-interest earning asset to total asset -Consumer and short-term fund to total asset -Overhead to total Asset -Total Liabilities to Total Asset	-Real GDP Per Capita -Annual Growth Rate of Real GDPPC -Annual Inflation rate	-Loan to Total Asset -Equity to total asset Ratio -GDP Per Capita -Inflation -Capital to total asset
Wasiuzzaman *et al.* (2010)	-Asset quality -Liquidity -Operations -capital -Bank Size	-GDP -Inflation	-Capital -Liquidity -Operational Efficiency -Asset Quality -Inflation -GDP
Idris (2011)	-Capital adequacy -Credit risk -liquidity -Bank size -Expenses management		-Bank size
Abduh and Idress (2013)	-Capital Ratio -Liquidity Ratio -Credit risk Risk -Financial Risk -Operation Efficiency -Bank Size	-GDP Growth rate -Inflation	-Bank Size -Financial market development -Inflation

Author	*Bank specific*	*Macroeconomic determinants*	*Findings(Variables affected the bank profitability)*
Muda *et al*. (2013)	-Capital to total asset -Overhead to total asset -Total loans to total asset -Total deposit to total asset -Liquidity	-Inflation -GDP -GDP per capita	-Total loan to total asset -Total deposit to total asset -Capital to total asset -Bank size
Haron (2004)	-Total Expenses as a percentage to total asset -Total financing as a percentage of total deposit (liquidity) -Capital and Reserve as a percentage to total asset (capital)	-Percentage increase in consumer price index for each year (Inflation) -Growth in money supplies for each country and each year -The discount rate for each country and each year. -Market share	-Interest rate -Money supply -Capital -Liquidity -Inflation -Total expenses -Bank size

In summary, many previous kinds of literature find that the bank size, capital, liquidity, and inflation are the most significant variables to determine the Islamic banks profitability. On the other hands, previous literature did not use interest rate or base financing rate as the determinants of Islamic banks profitability except for Haron (2004). Thus, this study will examine the exact determinants for Islamic banks profitability and also investigate whether interest rate or base financing rate also can influence the Islamic banks profitability in Malaysia.

3.3 Determinants on Conventional Bank profitability

Demirguc-Kunt and Huizinga (1997) examine bank profitability of 80 countries for the period 1988-1995. The results show that bank characteristics, macro indicators, explicit and implicit financial taxation, and deposit insurance, financial structure, legal and institutional environment have an impact on the bank profitability. The authors also emphasize that the well-capitalized institutional are more profitable

while banks with relatively high non-interest earning asset and rely largely on deposit for their funding is less profitable.

Guru, Staunton and Balashanmugam (2002) in their study, attempt to identify the determinants of the successfulness of commercial bank in order to provide practical guides to improve the profitability performance of banks in Malaysia. According to this study, bank profitability is influenced by two elements, internal determinants, and external determinants. The finding concludes that the inflation rate and efficient expenses management are the most significant factors contributing to the high bank profitability while the high-interest ratio is associated with low bank profitability.

Anthanasoglou *et al.* (2005) examine the effects of bank specific, industry-specific and macroeconomic determinants on bank profitability of Greek banks. Their study applies Generalized Method Moment (GMM) technique that covers the period 1985-2001.They find that the bank-specific determinants affect bank's profitability with an exception of bank size. They also find that capital is also important in influencing bank's profitability. In addition, labour productivity growth and operating expenses also influence bank's profitability, showing that the cost decision of bank management is instrumental in influencing bank's profitability. Finally, the findings show that macroeconomic variables affect the performance of banking sector in Greek. The overall results conclude that the profitability of Greek bank is shaped by bank-specific factors and macroeconomic factors.

Kosmidou,Tanna and Pasiouras (2006) investigate the impact of bank-specific characteristics, macroeconomic conditions and financial market structure on the United Kingdom commercial banks from the year 1995 to 2002. The finding suggests

that capital strength, which is represented by the equity to asset ratio, is the main factor that influences the bank profitability. The macroeconomic variables such as GDP growth and inflation also affect bank profitability in the UK.

Sufian and Chong (2008) analyze bank profitability of Philippines banks during the year 1990-2005. The results show that the bank specific variables such as noninterest income and capitalization are positively impact the bank profitability. In addition, the results also suggest that inflation has a negative impact on bank profitability while economic growth, money supply, and stock market capitalization are not statistically significant to explain the variations in the profitability of the Philippines bank.

Vong and Chan (2009) examine the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the Macao banking industry. The results conclude that the capital strength is the most important factor in causing high profitability in Macao. The asset quality as measured by loan provisions has a negative relation with bank profitability. Similar to Guru, Staunton and Balashanmugam (2002), the macroeconomic variation which is inflation, has a positive impact on the bank profitability.

Alexiou and Sofoklis (2009) investigate the effects of bank-specific and macroeconomic determinants on the profitability of Greek banks for the period 2000-2007. The results recommend that bank-specific variables such as capital play a critical role in determining the bank profitability. The finding also suggests that macroeconomic factors such as inflation and private consumption play a significant role in shaping the performance of banking institutions in Greek.

Singh (2010) further examines the bank-specific and macroeconomic determinants for Indian banks. This study employs a sample of 35 banks operating in India, for the period 2003-2004 and 2008-2009.The return on asset (ROA) and return on equity (ROE) are used to measure the bank profitability. The findings conclude that inflation has a negative relation with bank profitability. In addition, the results show that foreign banks are not affected by macroeconomic variables of the host country as GDP was found to be statistically insignificant for foreign banks. Similar to Athanasoglou (2005), this study also proves that the size of the bank is not an important factor to influence bank performance in India.

Davydenko (2010) study the bank profitability in Ukraine by examining the impact of bank-specific, industry-specific and macroeconomic indicator on bank profitability of Ukraine banks.The data is coming from the financial statement, covering a period from 2005-2009. According to this author, Ukraine banks face problems with their low loan quality and do not manage the deposits to get some profit. However, despite low profits from the core banking activities, Ukrainian banks benefited from exchange rate depreciation.

Ali *et al.*(2011) study the impact of bank-specific and macroeconomic variables on bank profitability of commercial banks in Pakistan. Similar to Hussin (2011), Singh (2010) and Alper and Anbar (2011), this study also uses ROA and ROE as profitability indicators. The result shows that the efficient asset management and economic growth influence the bank profitability in Pakistan. Different from Sufian and Chong (2008), the capitalization variable leads to lower profitability while the operating efficiency leads to high profitability.

In the case of Pakistan banks, Javaid *et al.* (2011) study the bank profitability of 10 Pakistani banks during the year 2004-2008. Their study examines the impact of internal factors such as assets, loans, equity and deposits on the major profitability indicator return on asset, ROA. The results show that the equity and deposits have the significant impact on profitability. The results also suggest that higher total asset may not necessarily lead to higher profit due to diseconomies of scale. Also, higher loans can contribute towards higher profitability, but their impact is not significant.

Ramadan *et al.* (2011) investigate the nature of the relationship between the profitability of banks and the characteristics of internal and external factors by using data from the year 2001-2010. The result shows that high Jordanian banks profitability tends to be associated with well-capitalized banks, high lending activities, low credit risk and the efficient of credit risk management. On top of that, the estimated effect of size did not support the significant scale economies for Jordanian banks.

Alper and Anbar (2011) examine the bank specific and macroeconomics determinants of bank's profitability in Turkey from the year 2002 to 2010 by using a sample of 10 commercial banks. The results show that asset size and noninterest income have a positive and significant effect on bank profitability. However, on the macroeconomic variables, the only real interest rate is found to have the positive impact on profitability. The remaining bank-specific factors such as capital adequacy, liquidity, deposits/asset ratio and net interest margins as well as macroeconomic factors such as real GDP growth rate and inflation rate are not significant in affecting bank profitability in Turkey.

Jamal *et al.* (2012) investigate the possible macroeconomic factors that influence the profitability of domestic and foreign commercial banks in Malaysia. The result shows that interest rate influences the foreign bank's profit positively, but it has no impact on domestic's banks performance.

Vejzagic (2013) examines the economics factors that can stimulate bank profitability andconclude that only real GDP is significant and have a positive relationship with conventional bank profitability in Malaysia. In addition, the result also shows that real interest rate has no relationship with bank profitability in Malaysia

Tan and Floros (2012) examine bank profitability and inflation in China. This study uses a sample of 101 banks, during the period 2003-2009. Applying the Generalized Method of Moments (GMM), the results show that high-cost efficiency, low volume of non-traditional activity, high banking sector and stock market development contribute to high bank profitability. Different from Athansoglou *et al.* (2005) and Hussin (2005), this study concludes that bank size contributes to the bank profitability in China.

Francis (2013) examines the determinants of commercial bank profitability in Sub-Saharan Africa (SSA) that use an unbalanced panel of 216 commercial banks drawn from 42 countries in SSA from the period 1999-2006. By using the cost of efficiency model, this study concludes that the bank-specific and macroeconomic factors explain the variation in commercial bank profitability.

Riaz and Mehar (2013) examine the impact of bank-specific and macroeconomic indicators on the profitability of 32 commercial banks in Pakistanfrom the period 2006-2010. Bank profitability is measured by ROE and

ROA. The results suggest that bank-specific variables such as asset size, total deposit to total asset, credit risk and macroeconomic indicator, which is the interest rate, have a significant impact on bank profitability in Pakistan.

Anthanasoglou *et al.* (2006) examine the determinants of bank-specific, industry- specific and macroeconomic determinants of South Eastern European (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, FYROM, Romania and Serbia-Montenegro) over the period 1998 to 2002. The findings conclude that the bank specific variables such as credit risk, capital, operating expense management, size, foreign ownership, and market share determine the bank profitability. The macroeconomic variables such as inflation also have an impact on banks profitability in the South Eastern European banks.

Hoffman (2011) investigates the profitability of the US banking industry from the period of 1995-2007. The findings demonstrate that there is a negative relationship between capital ratio and the bank's profitability. This means that a high capital ratio signifies that a bank is operating over-cautiously and ignoring potentially profitable trading opportunities. In addition, a high capital ratio tends to reduce the risk on equity and, therefore, lower the expected return on equity.

Tariq et al (2014) examine the performance of Pakistani commercial banks from the year 2004 until 2010. The findings show that the capital strength is the main determinant of bank's profitability, followed by the asset quality, banks size and inflation. This implies that a well-capitalized bank is less risky and can generate high profitability.

Omar and Mutairi (2008) investigate the impact of bank-specific determinants on bank profitability in the Kuwait banking sector. By using a pooled annual data for

seven national commercial banks from the year 1993-2005 and five variables models, the results show that equity ratio, loan assets ratio, and operating expenses ratio and total assets are the determinants of Kuwait bank's profitability.

Table 3.2: Summary for study on determinants of bank-specific and Macroeconomic variables for conventional bank

Author	*Bank Specific*	*Macroeconomic variables*	*Findings(variables affected the bank profitability)*
Demirguc-Kunt and Huizinga (1997)	-Equity to total asset -Loan to total asset -Noninterest-earning asset to total asset -Customer and short-term funding to total asset -Overhead to total asset	-GDP -Growth -Inflation -Real interest rate -Reserves -Tax rate	-Equity to total asset -Non-interest earning asset to total asset -Real interest rate
Guru, Staunton and Balashanmugam (2002)	-Asset composition -Capital -Deposit composition -Expenses management -Liquidity	-Inflation -Market growth -Market interest -Market share -Regulations	-Expenses management -Inflation -Asset composition
Anthanasoglou*et al.* (2005)	-Capital -Credit risk Risk -Productivity -Expenses management -Size	-Inflation -Cyclical Output	-Capital -Credit risk Risk -Productivity -Expenses management -Inflation
Kosmidou,Tanna and Pasiouras (2006)	-Capitalization -Efficiency management -Liquidity -Size	-Inflation -GDP	-Capital -GDP -Inflation
Sufian and Chong (2008)	-Log of total asset -Loans loss provisions divided by total loans -Non-interest income divided by total asset -Total overhead expenses divided by total asset -Book value of stockholder's equity as a fraction of total asset	-Natural log of GDP -Money supplies growth -Annual inflation rate -Market capitalization	-Loan loss provisions divided by total loans -Non-interest income divided by total asset -Market capitalization

Author	*Bank Specific*	*Macroeconomic variables*	*Findings(variables affected the bank profitability)*
Vong and Chan (2009)	-Capital -Asset composition	-Interest Rate -GDP -Inflation	-Capital -Asset composition -Inflation
Alexiou and Sofoklis (2009)	-Capital -Size -Credit risk quality -Cost efficiency	-Inflation -GDP	-Capital -Inflation
Singh (2010)	-Log of total asset -Non-interest income to total asset -Operating expenses to total asset -Net NPAs to total asset	-GDP -Inflation	-Non-interest income to total asset -Operating expenses to total asset -GDP
Davydenko (2010)	-Capital level -Credit risk -Size -Cost management -Liquidity -Loans to total asset -Deposit to total asset	-Exchange rate -GDP growth -Inflation	-Credit risk -Capital -Liquidity -Deposit to total asset -Size -GDP -Exchange rate
Ali *et al.* (2011)	-Bank size -Operating efficiency -Capital -Credit risk Risk -Portfolio composition -Asset management	-Economic growth -Inflation	-Capital -Credit risk -Asset management -Economic growth -Inflation
Javaid *et al.* (2011)	-Bank Size -Capital Ratio -Asset Composition -Deposit Ratio		-Bank size -Capital ratio -Deposit ratio
Ramadan *et al.* (2011)	-Capital adequacy -Asset composition -Credit risk -Cost management -Bank size	-Inflation -GDP	-Cost management -Credit risk -Capital adequacy

Author	*Bank Specific*	*Macroeconomic variables*	*Findings(variables affected the bank profitability)*
Alper and Anbar (2011)	-Asset Size -Capital Adequacy -Asset Quality -Liquidity -Deposit -Income Expenditure Structure	-GDP Growth Rate -Annual Inflation rate - Real interest rate	-Asset size -Real interest rate
Jamal *et al.* (2012)		-Inflation -Economic growth -Stock market development	-Inflation -Economic growth -Stock market development
Vejzagic (2013)		-GDP -Inflation -Real Interest rate	-GDP
Tan and Floros (2012)	-Bank Size -Liquidity -Credit Risk -Taxation -Capitalization -Cost Efficiency	-Inflation	-Credit Risk -Taxation -Cost Efficiency -Inflation
Francis (2013)	-Bank asset -Growth in bank deposits -Capital adequacy -Operational Efficiency -Liquidity	-Growth in GDP -Inflation	-Bank Asset -Growth in bank deposit -Capital adequacy -Liquidity -Operational efficiency -Growth in GDP -Inflation
Riaz and Mehar (2013)	-Asset size -Credit risk -Total deposit to total asset	-Interest rate	-Asset size -Credit risk -Total deposit to total asset -Interest rate
Anthanasoglou *et al.* (2006)	-Liquidity -Credit risk -Capital -Overheads efficiency ratio -Bank size	-Real per capita income -Inflation	-Credit risk -Capital -Overheads efficiency ratio -Bank size -Inflation
Hoffman (2011)	-Bank Size -Loan -Market concentration -Capital -Deposit -Investment		-Capital -Market concentration

Author	*Bank Specific*	*Macroeconomic variables*	*Findings(variables affected the bank profitability)*
Tariq et al (2014)	-Bank size -Costs to income ratio -Taxation -Leverage -Non-interest income -Asset quality	-Inflation -Interest rate	-Capital -Bank size -Inflation -Asset quality
Omar and Mutairi (2008)	-Equity to total asset ratio -Loan to total asset ratio -Operating costs to total asset ratio -Non-interest asset to total asset ratio -Log of total asset		-Equity ratio -Non-interest assets ratio -Log of total asset
Bertin *et al.* (2014)	-Equity to total asset -Size -Credit risk -Liquidity -Operational expenses to total asset	-Inflation -Annual growth rate -Economic growth -Concentration	-Size -Capital ratio -Economic growth -Inflation -Bank concentration

In summary, there are many previous studies examine the determinants of conventional banks profitability around the world. Most of them find that capital, credit risk, liquidity, bank size, GDP, and inflation is the most significant variables to determine the conventional banks profitability.

3.4 Determinants on Islamic and conventional banks profitability (comparative study)

Wasiuzzaman (2013) studies the performance of Islamic and conventional banks in Malaysia for the period 2005-2009. This study used information from 14 banks in Malaysia (nine conventional and five Islamic). From the study, they found that both Islamic and conventional banks have different significant variables. The return on average asset, bank size and board size values is significantly affected the

conventional banks while the operational efficiency, asset quality, liquidity, capital adequacy and board independence were highly significant for the Islamic bank in Malaysia.

Rahman *et al.* (2012) analyze the key determinants of profitability of conventional and Islamic banks and investigate the relationship between bank's internal characteristics and performance in Pakistan. This study also analyzes the effect of bank's parameters and the microeconomic meter on the conventional and Islamic banks in Pakistan during period 2006 till 2010. The result shows that major internal factors such as asset, capital, loan, and deposits maximally contribute to the bank's profitability for Islamic and conventional banks in Pakistan.

Elsiefy (2013) investigate the determinants of conventional and Islamic bank's profitability in Qatar over the period 2006-2011.This study used 18 banks specific variables divided into seven categories representing the capital adequacy, bank size, liquidity, asset quality, cost efficiency, asset mix and funding (liability) management. The author concludes that the determinants of profitability differ widely between the conventional and Islamic banks in Qatar.

Mokni *et al.* (2014) examine the bank profitability in MENA region by doing the comparative analysis between the conventional and Islamic bank. This study covers a sample of 15 conventional and 15 Islamic banks for the period 2002-2009. The finding shows that for the banks specific determinants, the credit risk quality, liquidity, and banks size significantly affected the bank's profitability while for the economic variables; only GDP significantly affected the bank profitability.

Rozzani et al (2014) investigate the determinants of banks performance; conventional versus Islamic. This study is using a sample from 19 conventional banks

and 16 Islamic banks for the year 2008 to 2011. This study found that the significant negative relationship is found to exist between the operational cost and conventional bank. On top of that, they also found a positive significant relationship between the credit risk and the Islamic bank. This study also stressed that the conventional and Islamic bank are different in regards to the factors that affected their performance.

Table 3.3: Summary for study on determinants of bank-specific and macroeconomic variables for conventional and Islamic banks

Author	*Bank specific*	*Macroeconomic variables*	*Findings (variables affected the bank profitability)*
Wasiuzzaman (2013)	-Board size -Board independence -Liquidity -Operational efficiency -Capital Adequacy -Asset Quality -bank Size	-Inflation	-Return to average asset -Bank size -Board size value -Operational efficiency -Asset quality -Capital adequacy
Mokni *et al.* (2014)	-Bank Capital -Operating ratio -bank Size -Off-balance sheet activities -Credit risk -Interest rate risk -Bank age	-Inflation -GDP	-Credit risk -liquidity -bank size -GDP
Rozzani *et al.* (2014)	-Capital adequacy -Asset Quality -Management Quality -Earnings Quality Liquidity -Operational cost -Credit risk		-Operational cost -Credit risk
Rahman *et al.* (2012)	-Logarithm of total asset -Total Equity to total asset -Total loans to total asset -Deposit to total asset		-Total deposit to total asset -Capital -Assets
Elsiefy (2013)	-Capital -Bank size -Cost efficiency -Liquidity -Credit risk	-GDP Growth -GDP per capita -Inflation	-Capital -Cost efficiency -Liquidity

In summary, the previous study finds that the important determinants for banks profitability for Islamic and conventional banks are capital, bank size, credit risk and liquidity. Nevertheless, this study will examine the determinants of bank-specific and macroeconomic variables for Islamic and conventional banks in Malaysia.

3.5 Previous Study on Bank profitability during Global Financial Crisis

Ahmad et. al. (2011) examines the impact of 1998 and 2008 financial crisis on the profitability of Islamic bank. The Fixed Effect Model (FEM), used to analyze the Islamic bank profitability during the crisis year. The results show that more profitable banks that have higher operating expenses against the asset, more equity against the asset and concentrated at high-income countries show the close relationship between monetary factors in determining the Islamic bank profitability. Hence, it shows that Islamic bank is not affected by the global crisis economy for the year 1998 and 2008.

Hasan and Dridi (2010) examine the performance of Islamic bank and conventional bank during world financial crisis by looking at the impact of the crisis on the profitability, credit risk, and asset growth and external rating. The Islamic and conventional banks have been significant market share in their countries. The results show that Islamic bank is affected differently than the conventional bank. The weakness in risk management practices in some Islamic bank led to a larger decline on the year 2009, compared to the commercial bank. However, the Islamic bank credit risk and asset growth performed better that conventional bank from the year 2008-2009.

Sufian (2009) studies the determinants of bank efficiency during unstable macroeconomic environment in Malaysia. By using the Data Envelopment Analysis

(DEA), the results shows that bank efficiency is negatively related to the expense preference behaviour and economic conditions while bank efficiency is positively related to loans intensity.

Rachdi (2013) investigate the impact of bank-specific, industry-specific and macroeconomic determinants on the profitability, before (2000-2006) and during (2007-2010) the international financial crisis. The study concludes that the Tunisian banking sector was slightly exposed to the effects of the international financial crisis because of its low integration in international financial crisis.

Dietrich and Wanzenried(2011) in their study analyze the profitability of 453 commercial banks in Switzerland over the period from 1999 to 2008. This study considers the pre-crisis and the crisis years 2007-2008 separately. Their study finds that the Switzerland banking sector affected during global financial crisis.

Table 3.4: Summary for study on Global financial Crisis

Author	*Bank specific*	*Macroeconomic variables*	*Findings (variables affected the bank profitability)*	*Global financial Crisis*
Ahmad et. al. (2011)	-Operating expense over total asset -Equity to total asset -Size of the bank -Total loans to bank total assets -Natural logarithm of total banks deposits -Nonperforming loans to total loans	-GDP -Inflation -Stock market capitalization size	-Operating expense against asset -Equity -High-income country -Non-performing loans over total asset	-Islamic banks' Profitability has not been impacted during Asian and Global Financial crisis.
Hasan and Dridi (2010)	-Credit risk growth -Asset growth	-External rating	-Credit risk Growth -Asset Growth -External rating	-Suggest that Islamic banking fared differently than conventional bank during the global financial crisis

Author	*Bank specific*	*Macroeconomic variables*	*Findings (variables affected the bank profitability)*	*Global financial Crisis*
Rachdi (2013)	-Capital Adequacy -Liquidity -Cost-income ratio -Yearly growth of deposits -Bank Size	-Inflation Rate -GDP	-Capital -Liquidity -Bank size -GDP	-Tunisian banking sector was slightly exposed to the effects of international financial crisis.
Dietrich and Wanzenried(2011)	-Equity over total asset -Cost-income ratio -Loan loss provision over total loans -Yearly growth of deposits -Bank size -Difference between bank and market growth of total loans -Interest income share -Funding costs -Bank age -Bank ownership -Nationality	-Effective tax rate -Yearly change of regional population -Real GDP growth -Term structure of interest rate -Stock market capitalization -Herfindahl index	-Capital Ratio -Cost-to-income ratio -Loan loss provision over total loans -bank size -Taxation -Yearly change of regional population	-Switzerland banking sector exposed to the effects of the global financial crisis.
Sufian (2009)	-Natural logarithm of total deposits -Total loan over total assets -Non-interest income over total asset -Non-interest expense over total asset -Total book value of shareholder equity over total asset	-Natural Logarithm of total asset -	-Natural Logarithm of total deposit -Total loan over total asset -Non-interest income over total asset -GDP	-High degree of inefficiency in the Malaysian banking sector, particularly a year after the East Asian crisis.

In summary, many of the previous studies examine the determinants that affect the bank's profitability during and after global financial crisis. Most of them found that the global financial crisis affects the bank's profitability. Ahmad *et al.* (2011) examines the effect of global financial crisis towards Islamic banks profitability in Malaysia and found that the Islamic bank profitability is not affected during the global financial crisis.

Overall, the above literature examines the impact of bank-specific, industry-specific and macroeconomic determinants towards bank profitability in the different country. The majority of the research uses the ROA and ROE as profitability indicator. However, some author refused to use ROE as a proxy for profitability as its neglects the financial leverage (Flamini et. al., 2009 Wasiuzzaman *et al.*, 2010).For internal factors influencing bank profitability, the majority of the previous study employ bank size, capitalization, liquidity, financial, credit risk, cost efficiency, portfolio composition and operation expenses. For external factors, previous studies employ bank concentration, inflation, interest rate, economic growth, financial market development and GDP as determinants of bank profitability. In this regard, the results are mixed because of different policy, regulation, and economic background.

3.6 Hypothesis Development

Hypothesis 1:

From the review of the existing literature, capital refers to the amount of own funds available to support a bank's business and, therefore, bank capital acts as a safety net in the case of adverse developments. Anthanasoglou *et al.* (2006) state that in a way or another well-capitalized bank may send a good signal to the market regarding its performance. Kosmidou,Tanna and Pasiouras (2006) in their study expected that the higher the capital, the lower the need for external funding and, therefore, the higher the profitability of the bank. Additionally, well-capitalized banks face lower costs of going bankrupt which reduce their costs of funding. Base on previous arguments, hypothesis 1 will be as follows:

H1: There is a positive relationship between capital and bank profitability in Malaysia

Hypothesis 2:

According to Guru, Staunton and Balashanmugam (2002), in terms of liquidity management, since banks are involved in the business of transforming short-term deposits into long-term credit risk, the banks would be constantly faced with the risks associated with the maturity mismatch. In order to hedge against liquidity deficits, which can lead to insolvency problems, banks often hold liquid assets, which can be easily converted to cash. However, liquid assets are often associated with lower profitability. Furthermore, according to Elsiefy (2013); thehigher level of liquidity makes banks less vulnerable to failure but is also usually associated with lower rates of return and may result in lost profitable investment opportunities. Base on previous arguments, hypothesis 2 will be as follows:

H2: There is a negative relationship between liquidity and bank profitability in Malaysia

Hypothesis 3:

Anthanasoglou *et al.* (2006) suggest that increased exposure to credit risk is normally associated with decreased firm profitability and, hence, expect a negative relationship between ROA and credit risk. According to Ramadan *et al.* (2011), credit risk can be defined as the potential loss of all or part of the interest owed, or the origin loan, or both together. The environment in which the bank works affects the bank's credit risk, poor legal environment leads to weak enforcement of bank rights, which leads to higher credit risk. In addition, lack of accurate information about borrowers, and weak economic growth may expose the bank to higher credit risk. Theoretically, the greater the exposure to credit risk, the lower is the banks profit; a negative effect of the credit risk on the banks profitability is expected.

H3: *There is a negative relationship between credit risk and bank profitability in Malaysia*

Hypothesis 4:

Abduh and Idress (2013) in their study state that the relationship between the size of the bank and profitability are mixed. Generally, the bigger the size of the bank, the higher the profitability. The reason is that large size may result in economies of scope that result in greater loan product diversification and accessibility to capital markets which are not available to small banks. Furthermore, Muda *et al.* (2013) in their study found that bank size has a highly significant positive impact on bank's efficiency, which means that the largest bank size is associated with high efficiency. Base on previous arguments, hypothesis 4 will be as follows:

H4: There is a positive relationship between bank size and bank profitability in Malaysia.

Hypothesis 5:

To measure the relationship between economic conditions and bank profitability, the annual inflation rate is used. Inflation is an important determinant of banking performance. In general, high inflation rates are associated with high income. Tan and Floros (2012) in their study consider inflation as an important macroeconomic variable and found to be significantly and positively related to bank profitability. Anthanasoglou *et al.* (2006) in their study also find that inflation positively and significantly affects profitability. This implies that, with inflation, bank income increases more than bank costs, which may be viewed as the results of the failure of

bank customers (comparative to bank managers) to forecast future inflation. Base on previous arguments, hypothesis 5 will be as follows:

H5: There is a positive relationship between inflation and bank profitability in Malaysia.

Hypothesis 6:

The gross domestic product (GDP) is among the most commonly used macroeconomic indicators for measuring an economy's total economic activity. The GDP is expected to influence numerous factors related to the supply and demand for loans and deposits. The coefficient of the variables is expected to be positive (Singh, 2010).Abduh and Idress (2013) expected GDP growth affect banks profitability positively. This is because the default risk is lower in upturns than in downturns. Besides, higher economic growth may lead to a greater demand for both interest and non-interest activities, thereby improving the profitability of banks. Base on previous arguments, hypothesis 6 will be as follows:

H6: There is a positive relationship between GDP and bank profitability in Malaysia.

Hypothesis 7:

According toGuru, Staunton, and Balashanmugam (2002), in their study find that the interest rate has a positive impact on bank profitability. This may reflect on the elasticity for loans, which may be quite inelastic in view of the expanding economy, coupled with the prevailing business confidence at that time. Tan and Floros (2012) also find that the interest rate positively impacts on bank profitability. This implies that during the period of the study, the interest rate adjusts accordingly, resulting in

revenues that increase faster than costs, with a positive impact on bank profitability. Base on previous arguments, hypothesis 7 will be as follows:

H7: There is a positive relationship between interest rate and bank's profitability in Malaysia.

Chapter Four: Research Methodology

4.1 Introduction

The aim of this chapter is to provide a discussion on the model, dependent variables, independent variables, sample, and data to be used in this research.

4.2 Model

The model to be estimated is adopted from Anthanasoglou *et al.* (2005):

Model 1:

$$ROA = \beta_O + \beta_1 CAPITAL_{it} + \beta_2 LIQUIDITY_{it} + \beta_3 CREDIT\ RISK_{it} + \beta_4 SIZE_{it} + \beta_5 INFLATION_{it} + \beta_6 GDP_{it} + \beta_7 DUMFOREIGN_i t + \varepsilon_{it} \quad (1)$$

Where,

ROA	=	Denotes the bank profitability that is ROA, calculated as net income to total asset.
CAPITAL	=	Calculated as total equity to total asset
LIQUIDITY	=	Calculated as total loan to asset
CREDIT RISK	=	Calculated as loan loss provision to total loan
SIZE	=	Measured by natural log of total asset
INFLATION	=	Annual percentage of consumer price index
GDP	=	Annual percentage change of Malaysia GDP
DUMFOREIGN	=	1 for foreign bank, 0 for otherwise
ε_{it}	=	Error term

The objective of this study also is to study the influence of interest rate and the performance of Islamic and conventional bank's profitability in Malaysia during the economic crisis from the year 2007 until 2009.To test the influence of interest rate on the performance of the Islamic and conventional bank in Malaysia, the Model 2 was

developed. The model 2 will remove the variable of inflation and GDP and insert the interest rate and dummy for the global crisis.

Firstly, the analysis is done separately between Islamic and conventional bank. Secondly, the data for both Islamic and conventional bank are tested together by using model 2 for confirmation purposes. Therefore, the model 2 as follows:

Model 2:

$$ROA = \beta_O + \beta_1 CAPITAL_{it} + \beta_2 LIQUIDITY_{it} + \beta_3 CREDIT\ RISK_{it} + \beta_4 SIZE_{it} + \beta_5 INTERESTRATE_{it} + \beta_6 DUMCRISIS_{it} + \beta_7 GDP_{it} + \beta_8 DUMFOREIGN_{it} + \varepsilon_{it} \ldots\ldots\ldots (2)$$

Where,

ROA = Denotes the bank profitability that is ROA, calculated as net income to total asset.

CAPITAL = calculated as total equity to total asset

LIQUIDITY = calculated as total loan to asset

CREDIT RISK = calculated as loan loss provision to total loan

SIZE = measured by natural log of total asset

INTEREST RATE = Annual rate for interest rate

DUMCRISIS = 1 for 2007, 2008 and 2009
0 for 2010, 2011 and 2012

DUMFOREIGN = 1 for foreign bank, 0 for otherwise

ε_{it} = Error term

4.3 Variable

4.3.1 Dependent Variable

ROA

ROA is proxied by net income over the total asset. ROA is the measurement for bank profitability because, in principal, ROA reflects the ability of a bank's management to generate profits from the bank's asset, although it may be biased due to off-balance-sheet activities(Anthanasoglou *et al.*2005).According to Bashir (2003), the main reason to use ROA as one of the measurements for bank profitability is because the ROA shows the profit earned per unit of assets and reflects the management ability to utilize banks' financial and real investment resources to generate profit.

4.3.2 Independent Variables

4.3.2.1 Bank Specific Determinants

Size

To proxy for the bank size, we are using the natural logarithm of total asset. Idris et al (2011) and Abduh and Idress (2013) in their study conclude that bank size is significant in determining the Islamic bank profitability. According to them, the bigger the size of the bank, the higher is the profitability. This is because the larger size bank may result in the economics of scale that will reduce the cost of gathering and processing information or in the economics of scope that results in greater loan product diversification and accessibility to the capital markets which are not available in small banks. In this study, the bank size is expected to have a positive relationship with the conventional and Islamic bank profitability.

Capital

The ratio of total equity to the total asset is used to proxy for the capital variable. According to Anthanasoglou *et al.*(2005), the capital variable is positive and highly significant. A bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability. In this study, the capital is expected to have a positive relationship with the conventional and Islamic bank profitability.

Liquidity

Total loan to the total asset is used to proxy these variables. According to Wasiuzzaman *et al.* (2010), generally, the higher the value of the ratio, the larger the margin of safety the bank possesses to cover the debts. In this study, the liquidity is expected to have a negative relationship with both Islamic and Conventional bank's profitability. Haron (2004) state that a bank with high liquidity will prevent itself from long-term investment opportunities, thus regarded as opportunity costs and expenses to them. This scenario will lead to a low return for bank's profitability. In this study, the capital is expected to have a negative relationship with the conventional and Islamic bank profitability.

Credit risk

To proxy these variables, loan loss provisions to total loan ratio used. Abduh and Idress (2013), Idris et al (2011) found a negative relationship between credit risk and bank's profitability. It shows that the credit risk can give huge influence to the bank's profitability as the theory suggest that the increased exposure to credit risk is normally

associated with decreased the bank's profitability. In this study, the credit risk is expected to have a negative relationship with the bank's profitability.

4.3.2.2Macroeconomic Profitability Determinants

GDP

To proxy for these variables, an annual real gross domestic product growth rate is used. Abduh and Idress (2013) in their study find that the GDP growth is affected the bank's profitability positively. Higher economic growth will influence the demand for both interest and non-interest activities, thereby improving the bank's profitability. In general, the GDP plays the important things to reflect the higher demand for bank's customer as well as to attract more potential competitors into the market. This study expects that the GDP will have a positive relationship with bank's profitability.

Inflation

To proxy for this variable, the annual percentage of consumer price indexis used. Anthanasoglou *et al.* (2005) in their study mention that the relationship between expected inflation (or long-term interest rates, which incorporates inflation expectations) and profitability is ambiguous. However, Tan and Floros (2012) in their study find that the inflation is significantly and positively related to bank profitability. In this study, we expect that inflation rate has a positive relationship with banks profitability.

Interest Rate

To proxy this variable, the annual rate for the interest rate is used. According to Guru, Staunton, and Balashanmugam (2002), the lending rates in Malaysia are based on a base-lending rate (BLR), which is computed for each bank by taking the cost of the

fund into account. Furthermore, the average annual BLR for all commercial banks in the country is reported in the Central Bank's annual report. However, starting 2nd January 2015, the BLR is replacing with Base Rate (BR).Vong and Chan (2009) believed that the rising of interest rate should lead to higher banking sector profitability by increasing the spread between the saving and the borrowing rates, and find that the interest rate has a positive impact on the bank profitability. The variables used for this study are summarized in Table 4.1.

Table 4.1: Definitions, notations and the expected effect of the explanatory variables on bank profitability

Variable	*Proxy*	*Author*	*Expected Sign*
Dependent Variable:			
ROA	Net income/Total Asset	Tan and Floros (2012)	
Determinants			
Bank Specific:		*Xi,t*	
Size	Natural Logarithmof Total Asset	Tan and Floros (2012) Abduh and Idress (2013)	+
Capital	Total Equity/Total Assets	Tan and Floros (2012) Abduh and Idress (2013)	+
Credit risk	Loan loss provision/loans	Tan and Floros (2012) Abduh and Idress (2013)	-
Liquidity	Loan/ Total Asset	Tan and Floros (2012)	-
Macroeconomic :			
GDP	Annual real Gross Domestic Product growth rate	Abduh and Idress (2013)	+

Variable	*Proxy*	*Author*	*Expected Sign*
Inflation	annual percentage of theconsumer price index	Mokni *et al.* (2014)	+
Interest Rate	Annual rate for interest rate	Guru, Staunton and Balashanmugam (2002)	+
DUMFOREIGN	1 for foreign Bank, 0 for otherwise		
DUMCRISIS	1 for 2007, 0 for rest of years 1 for 2008,0 for rest of years 1 for 2009,0 for rest of years		

4.4 Methodology

Estimation technique was used to evaluate the determinants of Islamic and conventional bank's profitability in Malaysia measures by the Ordinary Least Square (OLS) regression. The unbalance data from 30 samples was conducted by using GRETL programme.

4.5 Sample

According to the Central Bank of Malaysia's List of Licensed banking Institutions in Malaysia, there are 27 conventional banks and 16 Islamic banks were established in Malaysia. The final sample of Malaysian banks is comprised of 15 conventional banks and 15 Islamic banks. Financial data is obtained from the annual reports of all banks examined in the present study between the year 2007 and 2012.

The sample comprises 2 types of banks; that is the conventional and Islamic bank in Malaysia. Table 4.2 shows the list of sample bank use in this study.

Table 4.2: Sample of the Islamic and Conventional Banks in Malaysia

Islamic bank	Local/Foreign	Conventional Bank	Local/Foreign
Hong Leong Islamic Bank Berhad	Local	**Affin Bank Berhad**	Local
Affin Islamic bank Berhad	Local	**Allianz Malaysia Berhad**	Local
Alliance Islamic Bank Berhad	Local	**AmbankBerhad**	Local
AmIslamic Bank Berhad	Local	**Bangkok Bank Berhad**	Foreign
Asian Finance Bank Berhad	Foreign	**Bank of America Malaysia Berhad**	Foreign
Bank Islam Malaysia Berhad	Local	**Bank of China (Malaysia) Berhad**	Foreign
Kuwait Finance House (Malaysia) Berhad	Foreign	**CIMB Bank Berhad**	Local
Bank Muamalat Malaysia Berhad	Local	**HSBC Bank Malaysia Berhad**	Foreign
OCBC Al-Amin Bank Berhad	Foreign	**Hong Leong Bank Berhad**	Local
Maybank Islamic Berhad	Local	**J.P Morgan Chase bank Berhad**	Foreign
RHB Islamic bank Berhad	Local	**Malayan Banking Berhad**	Local
Public Islamic bank Berhad	Local	**OCBC Bank (Malaysia) Berhad**	Foreign
Standard Chartered SaadiqBerhad	Foreign	**RHB Bank Berhad**	Local
CIMB Islamic Bank Berhad	Local	**The Bank of Nova Scotia Berhad**	Foreign
Al-Rajhi Banking & Investment Corporation (Malaysia) Berhad	Foreign	**United Overseas Bank (Malaysia) Berhad**	Foreign

4.6 Data

The data for bank-specific variables is extracted from the income statement and balance sheet of respective bank's annual report in Malaysia. The data for macroeconomic variables is obtained from the indexmundi.com. The period of analysis covers from the year 2007 until 2012, including for the global financial crisis from the year 2007 until 2009.

Chapter Five: Findings

5.1 Introduction

This chapter present the findings from the OLS on the determinants of banks profitability in Malaysia.

5.2 Descriptive Statistics

Table 5.1-Descriptive Statistics for Islamic and conventional sample

Variable	Mean	Minimum	Maximum	SD
ROA	0.94607	-0.07546	16.16	2.0920
Bank Specific Variables				
Capital	0.10849	0.007	0.782	0.08709
Liquidity	0.55153	0	1.53	0.36153
Credit risk	0.52744	-1.59	39.95	3.57230
Size	7.0781	5.119	9.4488	0.78722
Macroeconomic Variables				
Interest rate	0.064250.05550.06750.00420			
GDP	0.043	-0.017	0.072	0.031455
Inflation	0.027250	0.006	0.054	0.018160
DUMFOREIGN	0.47222	0	1	0.50062
DUMCRISIS	0.5	0	1	0.50139

Table 5.1 shows the descriptive statistics for the Islamic and conventional sample. For dependent variable, the mean for ROA is 0.946. The minimum is -0.0755 where the maximum is 16.16. The standard deviation for ROA is 2.092.

For the bank-specific variables, the mean for capital is 0.10849 and the maximum is 0.782. The minimum is 0.007 and the standard deviation is 0.0871.The mean for the liquidity is 0.552 where the maximum and minimum is 1.53 and 0 respectively. The standard deviation is 0.362. The credit risk shows average is 0.527 while the maximum and minimum is 39.95 and -1.59. In Malaysia, the average size for the bank is 7.078. The maximum is 9.448 while the minimum is 5.119. The

standard deviation shows 0.7872. The macroeconomic variables for the GDP show an average of 0.043 while the maximum and minimum is 0.072 and -0.017. The standard deviation is 0.0315. The average interest rate in Malaysia for the year 2007 until 2012 is 0.064. The maximum is 0.0675 and the minimum is 0.055 while for the standard deviation is 0.0042. The maximum inflation in Malaysia is 0.054 and the average is 0.027. While the minimum is 0.006 and the standard deviation is 0.0182.

Table 5.2-Descriptive Statistics for conventional bank's sample

Variable	Mean	Minimum	Maximum	SD
ROA	1.6957	0.0000	16.160	2.7002
Bank Specific Variables				
Capital	0.10393	0.0070	0.3154	0.04890
Liquidity	0.47266	0.0180	1.5300	0.40484
Credit risk	1.2808	-1.560	39.950	4.8387
Size	7.0344	5.4094	8.4767	0.81716
Macroeconomics Variables				
Interest Rate	0.06425	0.05550	0.06750	0.00421
GDP	0.04300	-0.01700	0.07200	0.03156
Inflation	0.02725	0.00600	0.05400	0.01814
DUMFOREIGN	0.46667	0.0000	1.0000	0.50168
DUMCRISIS	0.50000	0.0000	1.0000	0.50280

Table 5.2 shows the descriptive statistics for the conventional sample. The ROA, as the dependent variable, the mean is 1.6957. The minimum for ROA is 0.000 while the maximum is 16.160. The standard deviation is 2.7002.For the bank-specific variables, the mean for the capital are about 0.10393, while the minimum is 0.0070 and the maximum is 0.3154. The standard deviation is 0.04890. The mean for liquidity is 0.47266. The minimum is 0.0180 and the maximum is 1.5300. The standard deviation is 0.40484. The mean's for credit risk is 1.2808 while the minimum is -1.560 and the maximum is 39.95. The standard deviation is 4.8387.The

mean for the size is 7.0344. The minimum is 5.4094 while the maximum is 8.4767. The standard deviation is 0.81716.

For the macroeconomic variables, the mean for the interest rate is 0.06425. The minimum is 0.05550 while the maximum is 0.06750. The standard deviation is 0.00421.The mean for GDP is 0.04300. The minimum is -0.01700 while the maximum is 0.07200. The standard deviation is 0.03156. The mean for inflation is 0.02725.The minimum is 0.00600 and the maximum is 0.05400. The standard deviation is 0.01814.

Table 5.3-Descriptive Statistics for Islamic bank's sample

Variable	Mean	Minimum	Maximum	SD
ROA	0.009232	-0.07545	0.12542	0.02533
Bank Specific Variables				
Capital	0.087238	0.00000	0.19641	0.043871
Liquidity	0.63144	0.00000	1.1647	0.29318
Credit risk	-0.03377	-0.46000	0.00299	0.08753
Size	7.1207	5.1190	9.4488	0.75933
Macroeconomics Variables				
Interest Rate	0.06425	0.05550	0.06750	0.004214
GDP	0.04300	-0.01700	0.07200	0.031561
Inflation	0.027250	0.00600	0.05400	0.018143
DUMFOREIGN	0.47778	0.00000	1.0000	0.50230
DUMCRISIS	0.50000	0.00000	1.0000	0.50280

Table 5.3 shows the descriptive statistics for Islamic bank's sample only. For the dependent variables, the mean for ROA is 0.009232. The minimum is -0.07545 and the maximum are 0.12542. The standard deviation is 0.02533. For the bank-specific variables, the mean for capital is 0.087238. The minimum is 0.0000 while the maximum is 0.19641. The standard deviation is 0.043871. The mean for liquidity is 0.63144, while the minimum is 0.00000 and the maximum is 1.1647. The standard deviation is 0.29318. The mean for credit risk is -0.03377. The minimum is -0.46000

and the maximum are 0.00299. The standard deviation is 0.08753. The mean for size is 7.1207.The minimum is 5.1190 and the maximum is 9.4488. The standard deviation is 0.75933.

For the macroeconomic variables, the mean for the interest rate is 0.06425. The minimum is 0.5550 and the maximum is 0.06750. The standard deviation is 0.004214. The mean for GDP is 0.04300.The minimum is -0.01700 and the maximum are0.07200. The standard deviation is 0.031561.The mean for the inflation is 0.027250. The minimum is 0.00600 and the maximum is 0.05400. The standard deviation is 0.018143.

5.3 Correlation Matrix

Table 5.4-Correlation Matrix

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
ROA (1)	1.0000									
CAPITAL(2)	0.1418	1.0000								
LIQUIDITY(3)	-0.1730	0.0707	1.0000							
CREDIT RISK(4)	0.0509	0.0169	-0.1202	1.0000						
SIZE(5)	-0.0782	-0.1538	0.0074	-0.1674	1.0000					
INTEREST RATE(6)	-0.0070	-0.0071	0.0183	-0.1568	-0.0090	1.0000				
GDP (7)	-0.0443	-0.0212	0.0019	-0.0961	-0.0134	0.8169	1.0000			
INFLATION(8)	0.0620	-0.0847	0.0715	-0.1492	-0.0155	0.8836	0.4585	1.0000		
DUFOREIGN(9)	-0.0968	-0.0924	0.0602	-0.0924	-0.0812	0.0086	0.0085	0.0000	1.0000	
DUMCRISIS(10)	0.0548	0.0337	0.0024	0.0214	-0.0925	-0.1790	-0.4818	0.1529	0.0111	1.0000

The correlation matrix presents the degree of correlation between the explanatory variables used in this study. In general, the matrix shows that the correlation between the independent variables that are interest rate and inflation together GDP is high, that are 0.8836 and 0.8169, and shows that there is a multicollinearity problem exist. According to Kennedy (2008), the multicollinearity problems arise when the correlation is about 0.8. This study will use 2 models in order to run the independent variable. Model 1 consists of capital, liquidity, credit risk, size, inflation, GDP and dummy for aforeign bank. Model 2 drops the GDP and inflation and add interest rate and adummy for the 2008 global crisis.

5.4 Regression Results

The results from Model 1 are exhibited in Table 5.5 while the results from Model 2 are exhibited in Table 5.6. To compare the determinants of bank profitability, the sample is divided into three columns. Column one reports the results for Islamic banks. Column two shows the results for conventional banks while column three shows the results for Islamic and conventional banks. In order to avoid the multicollinearity problems, firstly, this study include the variables for capital, liquidity, credit risk bank size, inflation, GDP and dummy for foreign bank into Model 1. In a second step, the variables for inflation and GDP were removing and include the interest rate and dummy for global financial crisis into Model 2.

Table 5.5: Regression Results for Model 1

Dependent Variable: ROA

	Model 1		
	(1) *(Islamic Bank)*	(2) *(Conventional Bank)*	(3) *(Islamic and Conventional)*
Constant	0.7322	-0.39221	1.07158
	(0.1103)	-(0.9227)	(0.5189)
Bank Specific:			
Capital	2.0160*	12.9733*	11.3550***
	(0.0919)	(0.0767)	(0.0011)
Liquidity	-0.387**	-0.6399	-1.1003***
	-0.0119	-(0.3702)	(-0.0095)
Credit risk	0.3331	-0.00732	-0.00252
	(0.5091)	-(0.8911)	-(0.9457)
Size	-0.0508	-0.00337	-0.1435
	-(0.4295)	-(0.9941)	-(0.4906)
Macroeconomic:			
Inflation	-0.0687	45.515**	24.129**
	-(0.9776)	(0.0143)	(0.0131)
GDP	1.0207	-4.6303	-1.6905
	(0.4160)	-(0.6139)	-(0.7291)
Interest rate			
DUMCRISIS			
DUMFOREIGN	-0.3575***	-0.1908	-0.49716
	(-0.0003)	(0.7444)	(0.1174)
Pooled OLS	YES	YES	YES
R-Squared	0.3265	0.2184	0.206165
Adjusted R-Squared	0.21935	0.0912	0.14767
No of Observation	90	90	180

ROA= βO+ β1CAPITAL*it* + β2LIQUIDITY*it* + β3CREDIT RISK*it* + β4 SIZE *it* + β5INFLATION*t* + β6GDP*t* + β7FOREIGN*It* +$\mathcal{E}$

The dependent variable ROA is calculated as net income over total asset; CAPITAL is measured by total equity to thetotal asset; LIQUIDITY is proxies by total loan to thetotal asset; CREDIT RISK is proxies by loan loss provision over loan loss ratio; INTEREST RATE proxy by annual interest rate; SIZE proxy by natural logarithm
by total asset;INFLATION proxy by annual percentage of consumer price index; Values in parentheses is P-Value;.***,** and * indicate significant at 1, 5 and 10percent levels.

5.4.1 Bank Specific determinants

Table 5.5 presents the regression results from model 1. From model 1, the capital ratio has a positive and significant effect at 10 per cent for the sub-sample of Islamic and conventional banks, and 1 percent for the full sample. On the other hand, Table 5.6 presents the regression results from model 2. The model 2 shows a positive and significant effect at 5 percent for the sub-sample of the Islamic bank and 1 percent for the full sample. The findings of the positive coefficient are consistent with Kosmidou,Tanna and Pasiouras (2006), Anthanasoglou*et al.* (2005) and Rahman *et al.* (2012), but opposite to Wasiuzzaman *et al.* (2010). This results also in line with Mokni *et al.* (2014), indicate that banks with a sound capital position face lower costs of going bankrupt; which suggests reducing the cost of funding or lower need for external funding, implying higher profitability.

Liquidity has a negative and insignificant relationship with ROA for conventional banks from both model 1 and 2 uses in this study. These results are consistent with Mokni *et al.* (2014). On the other hand, from the Model 1, the relationship of liquidity has the negative and significant at 5 percent and 1 percent for the Islamic banks and full sample, respectively. The Model 2 also shows the same results, Islamic bank has a negative and significant at 10 percent and the full sample has a negative and significant at 5 percent. This finding is in line with Elsiefy (2013) and Haron (2004). It shows that banks in Malaysia with high liquidity will prevent itself from long-term investment opportunities, thus regarded as opportunity costs and expenses to them. This scenario will lead to a low return for bank's profitability.

From this study, the Model 1 and 2 shows that the bank size is insignificant for all three samples. This result is in line with Singh (2010), Anthanasoglou *et al.* (2005)

and Ramadan *et al.* (2011). According to Anthanasoglou *et al.* (2005), an explanation for this may be that small-sized banks usually try to grow faster, even at the expense of their profitability. In addition, newly established banks are not particularly profitable (if at all profitable) in their first years of operation, as they place greater emphasis on increasing their market share, rather than on improving profitability.

Model 1 and 2 also shows that the credit risk is insignificant for all three samples. This result is in line with Bertin *et al.* (2014) and Elsiefy (2013).

5.4.2Macroeconomics determinants

From Table 5.5, concerning the external factors related to the macroeconomic environment, GDP is insignificantly related to profitability for all three samples. This result is consistent with the finding of Sufian and Chong (2008) and Alper and Anbar (2011).

The results from Model 1 are exhibited in Table 5.5, shows that the inflation which is measured by the annual percentage of consumer price index shows a positive and significant relationship with ROA. The inflation is significant at 5 percent for the full and conventional sample only. This results is in line with Tan and Floros (2012) and Guru, Staunton and Balashanmugam (2002), stated that during the period of this study inflation is anticipated which gives banks the opportunity to adjust the interest rates accordingly, resulting in revenues that increase faster than costs, with a positive impact on profitability.

Table 5.6: Regression Results for Model 2

DependentVariable: ROA			
	Model 2		
	(1) *(Islamic Bank)*	(2) *(Conventional Bank)*	(3) *(Islamic and Conventional)*
Constant	0.411	-3.8797	-2.309
	(0.6133)	-(0.4107)	-(0.3061)
Bank Specific:			
Capital	2.6127**	8.06245	8.736***
	(0.0342)	(0.1141)	(0.0006)
Liquidity	-0.26304*	-0.4035	-0.75959**
	-(0.0755)	-(0.4386)	-(0.0152)
Credit risk	0.1695	-0.01105	0.00673
	(0.7554)	-(0.8107)	(0.8350)
Size	-0.07536	-0.03951	-0.07539
	-(0.2608)	-(0.9055)	-(0.6286)
Macroeconomic:			
Inflation			
GDP			
Interest rate	6.3808	73.856	50.235*
	(0.4991)	(0.1514)	(0.0652)
DUMCRISIS	-0.0027	0.58512	0.3497
	-(0.9747)	(0.1685)	(0.1323)
DUMFOREIGN	-0.3810***	-0.1387	-0.3509
	-(0.0001)	-(0.7493)	-(0.1399)
Pooled OLS	YES	YES	YES
R-Squared	0.23256	0.1084	0.142052
Adjusted R-Squared	0.1511	0.0109	0.098533
No of Observation	90	90	180

ROA= βO+ β1CAPITAL*it* + β2LIQUIDITY*it* + β3CREDIT RISK*it* + β4 SIZE *it* + β5INTERESTRATE*it*+ β6FOREIGN*It* + β7CRISIS*It* +*ε*

The dependent variable ROA is calculated as net income over total asset; CAPITAL is measured by total equity to the total asset; LIQUIDITY is proxies by total loan to the total asset; CREDIT RISK is proxies by loan loss provision over loan loss ratio; INTEREST RATE proxy by annual interest rate; SIZE proxy by natural logarithm by total asset; INFLATION proxy by annual percentage of consumer price index; Values in parentheses is P-Value.***,** and * indicate significant at 1, 5 and 10percent levels.

The results from Model 2 are exhibited in Table 5.6, show that interest rate has a positive and significantly affected the bank profitability in Malaysia at 1 percent for the full sample only. This result is in line with Alper and Anbar (2011) and Riaz and

Mehar (2013).According to Tariq et al (2014), interest rate leads to high commercial banks profitability by increasing the gap between the deposits and borrowing rates. These results show that banks in Malaysia have more saving and borrowing activities that lead to high profitability.

The dummy for foreign banks show the negative and significantly influence the Islamic bank profitability. In the other hand, the result from Model 2, exhibited in Table 5.6finds that the bank's profitability in Malaysia is not affected at all during the global financial crisis from the year 2007 and 2009.

Chapter Six: Conclusion and Recommendation

6.1 Conclusion

This paper investigates the effect of bank-specific and macroeconomic determinants on the profitability of Malaysia's banks from the year 2007-2012. This study uses the OLS from the GRETL programme to examine the main determinants on the banks profitability for 15 conventional and 15 Islamic banks in Malaysia.

The main purpose of this paper is to find the determinants of banks profitability. Besides, this study also examines the impact of global financial crisis towards banks profitability (DUMCRISIS) and to examine the impact of foreign banks towards banks profitability. In addition, this study also examines the impact of interest rate towards Islamic and conventional banks profitability in Malaysia. The empirical analysis results reveal that the determinants' significant varies between the Islamic and conventional bank in Malaysia.

This study finds that capital is important in explaining bank profitability and indicate that banks with a sound capital position face lower costs of going bankrupt; which suggests reducing the cost of funding or lower need for external funding, implying higher profitability. Additionally, liquidity has a negative and significant impact on profitability for Islamic banks and full sample only. It shows that banks in Malaysia, especially for Islamic banks prevent it from long-term investment opportunities and will lead to a low return for bank's profitability.

The bank size does not provide evidence of banks profitability in Malaysia. It shows that banks in Malaysia fail to utilize their total asset to the maximum level in generating the bank's profitability. Likewise, the credit risk of the banks is

insignificant in explaining the bank's profitability; shows that credit risk is unable to give huge influence to the bank's profitability as the theory. On the other hand, the dummy for the foreign bank also have negative and significantly affected the Islamic bank samples in Malaysia.

Finally, macroeconomic control variables, such as inflation and interest rate clearly affect the bank's profitability in Malaysia.

Overall, these empirical results provide evidence that the bank's profitability in Malaysia is shaped by banks specific and macroeconomic factors. The factors to determine the bank's profitability is vary between the Islamic and conventional bank in Malaysia.

6.2 Recommendation for future research

This study examines the determinants of banks profitability during 2007 until 2012. However, there is still the lack of information as many data from Islamic bank in Malaysia is not available for the year 2007. Due to that, the future research is recommended to extend the study period. In addition, the study on determinants of banks profitability can be more interesting with the implementation of goods and service tax (GST) in the banking and finance sector.

To enhance the academic understanding of this topic, future research can increase the sample size. The sample size in this study is limited and many important banks were omitted from this study. In addition, the future studies also suggested including other variables from industry specific that can influence the determinants of banks profitability in Malaysia.

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