

## **CHAPTER THREE**

### **LITERATURE REVIEW**

#### **3.1 Introduction**

Profit is the driving force of the firm, as well as the survival indicator of a firm- the accomplishment of its goal is entirely dependent on its profitability. The profitability is the main index of a firm's performance. Banks are a specific type of firms and therefore, the rate of profit is very important to bank performance. The performance can be divided into two elements: profitability and efficiency, which are interrelated in one way or another (Tahir, 1999). Thus, studies of profitability and efficiency of banks are important tools which contribute to the improvement of the bank performance, the evaluation of bank operations and the determination of management planning. Also, research on banks' performance is important for the improvement of the economy due to the fact that banks contribute to economic growth.

A large number of studies have been conducted about bank profitability. An early researcher who has conducted another study in this area is Short (1979) who studies the relationship between profit rates of the bank and concentration in relation to government ownership. Bourke (1989) later studies internal and external determinants of banks' profitability, including the concentration ratio and other variables. Based on these studies, a lot of researches have been done on bank profitability.

This chapter aims to review the literature that is relevant to the relationship between a set of internal and external factors and the in banks profitability. The focus is more on the profitability of Islamic banks in order to understand what have been done and what can be further researched.

#### **3.2 Theoretical Literature on Bank's Profitability**

The determinants of bank profitability are divided into two: the internal and external factors. The internal factors of profitability comprise of variables such as capital,

liquidity and expenses. These internal variables are considered to be controllable by the management of a bank. External variables are those factors that are considered to be beyond the control of the management of a bank such as concentration, inflation and gross domestic product growth. Generally, the banks seek to maximize profits through the employment of resources and control of internal determinants. At the same time, these financial organizations also seek to take advantage of the external factors which are beyond their control.

In discussing the trends in bank profitability, it is appropriate to remember exactly why banks maximize profits. Bank's shareholders are naturally claimants for its profits and it is thereby in their interest to maximize these profits. They maximize their return on investment by maximizing the revenue and by minimizing costs. Bank management can select the mix of inputs and outputs, by which profits are maximized, where they have different preferences, forego high-risk, high-return opportunities and optimize towards maximum profit (Jacob and Jaap, 2008).

This section discusses the economic theories concerning bank profitability. The investigation of bank profitability determinants has been conducted in a number of theories. According to Haron (1997) and Haron & Azmi (2004) a majority of studies related to bank profitability determinants have focused in on the following theories:

#### **Market-Power theories**

The market-power theories consist of the traditional industrial organization model embedded in the structure-conduct-performance theory.

The Structure-Conduct-Performance (SCP) was first proposed by Bain (1951). The SCP approach argues that an industry's performance depends on the conduct of its firms, which then depends on the structure. Markets with high concentration level induce a firm to behave (conduct) in a collusive way, as a result, performance of the firms gets better (Goddard *et al.*, 2004). Profits of the firms are determined by the concentration level of the market. Thus, the SCP theory explains that the market structure (concentration level of the market) through the conduct link determines the performance (profitability) of firms. In summary, SCP theory postulates that exogenous basic conditions determine the structure of the market and that there is a

one-way causation flow from the market structure that is through conduct to performance.

The traditional SCP theory has been challenged by the Relative Market Power (RMP). The debate about the importance of the market share rather than the concentration as a criterion of the market power virtually started with Shepherd (1972) leading Rhoades (1997) to coin the phrase “relative market power”(Nissan, 2003). RMP suggests that banks with large market shares and well-differentiated products are more efficient and can earn high profits. In other words, the banks with (relatively) large market share benefit from this exertion of market power, and independent of market concentration.

### **Efficient-Structure theory**

The efficient-structure theory (ES) emerges from the criticism of the SCP theory by Demsetz (1973) and Peltzman (1977). The ES postulates that the relationship between the market structure and performance of any bank is defined by the efficiency of the bank. Banks with superior management or production technologies have lower costs and therefore higher profits. The idea of the efficiency theory is based on the fact that the more efficient banks incur lower costs, which may lead directly to higher profitability. The efficient structure theory has been proposed in two hypotheses, the efficient-structure-X-efficiency (ESX) and efficient-structure-scale-efficiency (ESS) hypotheses. In the ESX hypothesis, it states that banks with more efficiency (better management, technologies and practices control costs) have lower costs, higher profits and larger market share. The ESS hypothesis states that the difference in profitability between banks is not caused by differences in the quality of management, but by differences in the level of scale efficiency at which a bank is operating. In other words, the ESS hypothesis states that some banks achieve better scale of operation that leads to lower costs. Lower costs lead to higher profit and faster growth for the scale-efficient banks.

### **Expense-Preference theory**

The Expense-Preference behavior theory is tested in the performance of banks, see for example: Haron (1997) and Al Manaseer (2007). It was first introduced by Becker (1957) and further developed by Williamson (1963). The Expense-Preference theory

provides an alternative view regarding managerial behavior. It proposes that the main goal which managers pursue is not to maximise profit but to own the utility or utility of the firm (bank), which is usually achieved via increasing salaries or other staff expenses. Williamson (1963) reports that the management may increase “staff expenditures, managerial emoluments and discretionary profits” rather than focus strictly on maximizing profits. If the management prefers a greater number of staff or more locations, this is normally reflected in the short term in higher efficiency ratios. Such decisions may contribute to profitability in the long-run.

### **Economies of scale theory**

Emery (1971) and Vernon (1971) were among the earliest researchers to link bank size with profitability (Haron and Azmi, 2004). The economies of scale states that a bank with larger size could enjoy the economies of scale and produce services at lower cost per unit. Since large banks are assumed to enjoy the economies of scale, they are able to produce their outputs or services more cheaply and efficiently than can the small banks. As a result, large banks will earn a higher profit than small banks. It is expected, therefore, that bank size is positively related to bank profitability.

The Structure-Conduct-Performance, Relative Market Power, Efficient-Structure and Expense-Preference Behavior are theories widely used in the empirical studies such as Haron (2004) and Al Manaseer (2007) dedicated to bank profitability.

Based on the framework of these theories, many studies have been done, but a lot of researchers do not restrict themselves into using only the internal and structure variables as the possible explanatory variables of bank profitability. Macroeconomic variables that include the annual inflation, gross domestic product growth and the GDP per capita are widely used in empirical research which may explain banks' profitability, see Table (4.3).

Demirguc-Kunt and Huizinga (1999) perform the analysis of variables which are not under the control of bank management and may have significant effect on bank performance. The variables studied include the inflation rate, GDP per capita, taxation level, overall financial structure, also various legal and institutional factors. Using bank-level data for 80 developing and developed countries in the years 1988-1995, the

study has found that there is a negative impact of gross domestic product per capita on return on capital. Furthermore, the inflation rate has a positive and highly significant impact on profitability. The influence of structural and institutional factors on bank profitability is found to be more significant in developing countries than in developed nations.

In line with the findings of Demirguc-Kunt & Huizinga (1999), other empirical studies have found a significant positive impact of inflation rates on banks' profitability, for example; Bashir (2000,2003), Jiang *et al.*, (2003), Haron (2004), Fotios & Kyriaki (2007), Al Manaseer (2007), Vong & Chan (2008), Aburime (2008b), Khediri & Khedhiri (2009), Flamini *et al.*, (2009), Sufian (2010a), Al-Jarrah, *et al.*, (2010), Wasiuzzaman & Tarmizi (2010) and Davydenko (2011). However, Hassan & Bashir (2003) and Sufian & Chong (2008) discover a negative impact of inflation on banks' profitability.

With regards to gross domestic product per capita variable, some findings have been supported the findings of Demirguc-Kunt & Huizinga (1999) such as Al Manaseer (2007). Another finding that gross domestic product per capita has a positive significant impact on profitability is validated by Bashir (2000), Hassan & Bashir (2003) and El Biesi (2010).

Other empirical studies have also investigated the influence of the external factors on the banks' profitability; in most cases a significant relationship is found between GDP growth and banks' profitability such as Jiang, *et al.*, (2003), Williams (2003), Hassan & Bashir (2003), Fotios & Kyriaki (2007), Al Manaseer (2007), Khediri & Khedhiri (2009), Flamini, *et al.*, (2009), Sufian (2010b), Wasiuzzaman & Tarmizi (2010), Sufian & Habibullah (2010a) and Davydenko (2011).

### **3.3 Measure of Banks' Profitability**

Profitability is measured in terms of ratios. The advantage of using profitability ratios is that the inflation invariant is not affected by changes in price levels. This is useful

in a time series analysis such as this, where the real value of profits may be distorted by the time varying inflation rates (Rasiah, 2010).

There are several ratios that are typically used to measure the profitability of banks such as return on assets (ROA), return on equity (ROE), return on deposits (ROD), net interest margin (NIM), profit expense ratio (PER) and profit margin (BTP/TA) (Burhonov, 2006). In line with the banking literature that has addressed the determinants of banks profitability; this study uses two measures of profitability deemed appropriate to be applied to Islamic banks. The two most often used are the rate of return on assets (ROA) and the rate of return on equity (ROE) (Iqbal and Molyneux, 2005). The study analyzes the profitability of Islamic banks based on these two measures.

With regards to measure the profitability of banks using the ROA, many studies have used the ROA as the dependent variable such as Abdus Samad and Hassan (1999); Guru *et al.*, (1999); Bashir (2000); Sharif (2000); Hassoune (2002); Williams (2003); Jiang *et al.*, (2003); Sanusi and Ismail (2005); Alkassim (2005); Kosmidou *et al.*, (2006); Al Manaseer (2007); Bennaceur and Goaid (2008); Li. Yuqi (2008); Vong and Chan (2008); Wasiuzzaman and Tarmizi (2010); El Biesi (2010); Sufian (2010a); Sufian (2010b); Dietrich and Wanzenried (2010); Sufian and Habibullah (2010a); Smaoui and BenSalah (2011); Said *et al.*, (2011); Ramadan *et al.*, (2011); Idris *et al.*, (2011) and Akhtar *et al.*, (2011). ROA is used because it shows the profit earned per unit of assets and reflects the management's ability to utilize the banks financial and real investment resources to generate profits, for this reason it may be considered the best measure of profitability. Return on assets is preferred to other profit measures because it measures the efficiency of banks with respect to banking operations. Furthermore, it minimizes differences resulting from differences in the capital structure. Finally, since the return on banks' deposits is contingent on the outcomes of the projects that the banks finance, the return on assets reflects the management's ability to generate positive returns on deposits (Al Manaseer, 2007).

Return on equity (ROE) is used as the dependent variable because it determines the extent of efficiency of the bank management in using shareholders' investments, (Bashir and Hassan, 2003). The ROE as the dependent variable have used in many

studies to measure the profitability of banks such as Abdus Samad and Hassan (1999), Guru *et al.*, (1999), Bashir (2000), Hassoune (2002), Alkassim (2005), Sanusi and Ismail (2005), Al Manaseer (2007), Dietrich and Wanzenried (2010), Sufian (2010b), Said and Tumin (2011), Akhtar, *et al.*, (2011), Ahmad and Noor (2011), Smaoui and BenSalah (2011) and Ramadan, *et al.*, (2011).

Following early study by Short (1979) and Bourke (1989), a number of studies have attempted to identify some of the major determinants of bank profitability. The previous studies' analyses have concentrated either on cross-country evidence or on the banking system of individual countries. There are a lot of studies that have been conducted with regards to the literature of determinants of commercial banks' profitability, whereas, there are few studies that have shown interest in the profitability of Islamic banks.

In line with the objectives of the study, previous studies in this chapter are divided to: previous studies on determinants of Islamic banks' profitability, previous studies on determinants of Islamic and commercial banks' profitability, previous studies on determinants of conventional banks' profitability, previous studies related to the impact of financial crises on bank performance, previous studies on profitability and efficiency differences between domestic and foreign banks, previous studies on the relationship between profitability and efficiency banks and previous studies on banks' efficiency.

### **3.4 Previous Studies on Determinants of Islamic Banks' Profitability**

This part is sub-divided into three sections: single country studies (Malaysia), single country studies (other countries) and panel country studies:

#### **3.4.1 Single country studies (Malaysia)**

Studies on the Islamic bank profitability have focused on a specific country, including Malaysia. Abdus Samad and Hassan (1999) evaluate inter temporal and interbank performance of Bank Islam Malaysia Berhad (BIMB) in profitability, liquidity, risk

and solvency; and community involvement for the duration of 1984-1997. Financial ratios are applied in measuring these performances. They have found that Islamic banks have made significant progress on the return on assets and return on equity.

Sanusi and Ismail (2005) examine the determinants of Islamic banks' profitability in Malaysia. They use the ROA, ROE and ROD which are assumed to be a function of bank internal characteristics, macroeconomic and financial structure as the external factors. The panel estimation technique is utilized to take into account the heterogeneity in these units. Fifteen samples of full-fledged Islamic banks and Islamic windows during the period (1995 - 2004) are used.

Pratomo and Ismail (2006) attempt to prove the agency cost hypothesis of Islamic Banks in Malaysia during the period of 2005- 2008. The findings have revealed that a lower equity capital ratio is associated with higher profit. Also they have found that the size of the bank has an insignificant effect on bank profitability.

Wasiuzzaman and Tarmizi (2010) examine the impact of bank characteristics, as well as macroeconomic determinants on the profitability of Islamic banks in Malaysia. The OLS method was used to analyze the data collected from sixteen Islamic banks (windows) during the period of 2005- 2008. The average return on asset (ROAA) ratio is used as proxy for profitability. Bank- specific determinants like capitalization, asset quality, liquidity, and operational efficiency are regressed against profitability. In addition, macroeconomic variables like GDP and Inflation are included in the analysis.

Idris, *et al.*, (2011) examine the determinants of profitability for Islamic banking institutions in Malaysia which are listed on the Bursa Malaysia. The bank-specific determinants (internal factors) include capital adequacy, credit risk, liquidity, bank size and management of expenses. Return on assets (ROA) is used as a profitability measure. The methodology employed is the Generalized Least Square (GLS) panel data analysis, using quarterly data from nine Islamic banks, which consist of foreign and local Islamic banks incorporated in Malaysia for the period of 2007- 2009.

Choong *et al.*, (2012) analyze the performance of Islamic commercial banks in Malaysia for the period of 2006-2009 using 11 local Islamic banks. A pool regression

model comprising of dependent variables (ROA and ROE) and numerous independent variables have been used. The results indicate that liquidity, concentration, level of capital and GDP per capita do not influence these banks' performance.

The main conclusions emerging from the studies above lie in the fact that, the studies related to Islamic banks' profitability in Malaysia are limited. Secondly, one of these three- the return on assets (ROA) and return on equity (ROE) can be the most often used to measure bank profitability. Thirdly, the OLS or GLS panel data analysis is an appropriate methodology to analyze the profitability of Islamic banks. Next, the independent variables are different from one study to another. For the bank's characteristics, Sanusi and Ismail (2005) find that high profitability tends to be associated with banks that hold a relatively high ratio of total loans, pay higher *zakat*, lower non-interest earnings and growth of total assets. Wasiuzzaman and Tarmizi (2010) find that capital and asset quality have an inverse relationship with bank profitability while liquidity and operational efficiency have a positive influence. Idris *et al.*, (2011) suggest that the bank size is the most important factor in explaining the variation of profitability for Islamic banking institutions in Malaysia as larger bank size will fundamentally have better access to capital markets. In terms of macroeconomic variables, Wasiuzzaman and Tarmizi (2010) find that GDP and inflation have a positive relationship with bank profitability. By contrast, Sanusi and Ismail (2005) establish that the GDP growth has no impact on bank profitability. Also, Choong *et al.*, (2012) maintain that the GDP per capita has no impact on Islamic commercial banks' profitability.

### **3.4.2 Single country studies (other countries)**

Bashir (1999) examines the effects of total assets on the performance of Islamic banks in the Middle East. Using data from two Sudanese banks, the empirical result provides limited support to the theoretical predictions. The relationships between bank size and profitability measures are statistically significant, indicating that Islamic banks become more profitable as they prosper in size.

Khrawish *et al.*, (2011) also examine the relationship between bank size and profitability and discover that there is a significant and positive relationship between

ROE and bank size, but the relationship between ROA and bank size is a negative. Khrawish *et al.*, (2011) examine the factors that might affect the Jordanian Islamic banks' profitability during the period from 2005 to 2009. The analysis reveals that there is a significant and negative relationship between ROA and total liabilities to total assets, gross domestic product growth rate and inflation rate of the Islamic Banks. Similarly, Al Harahsha (1999) examines the relationships between Islamic banks' profitability and internal banking characteristics, using data for Jordan Islamic banks during the period of 1985-1997. Return on assets serves as a profitability measure. The study finds that there is a positive association between profitability and capital ratio and managerial efficiency, also there is a negative association between profitability and liquidity ratio. In the case of the Jordanian banks, Saleh and Zeitun (2006) analyse the performance of Jordanian Islamic banking during the period of 1998-2003. The study has found that Islamic banks have a high growth in the profitability, which encourages other banks to practice the Islamic financial system.

Akhtar *et al.*, (2011) investigate the impact of how the bank specific factors of profitability affects the performance of six Islamic banks in Pakistan from 2006 to 2009. The ordinary least square method is employed. Return on assets and return on equity are used as a proxy for profitability. The results indicate that the capital adequacy has a positive relationship. But, the operating expenses have a negative relation with profitability. Also, no significant relationship is found between bank size and profitability.

From the above studies it can be concluded that results are different from one study to another, depend on some factors such as environment and period of study. Bank size, capital ratio, liquidity ratio, operating expenses, managerial efficiency, gross domestic product growth rate and inflation rate are important factors that might affect the banks' profitability. Also, return on assets and return on equity commonly used to measure profitability.

### **3.4.3 Panel country studies**

Panel country studies of determinants of Islamic bank profitability dealing with macroeconomic indicators employ variables such as the gross domestic product per

capita, the growth rate of gross domestic product and inflation. Haron (1996) provides empirical evidence on the determinants of profitability for Islamic banks in the period of 1982-1994 in the panel countries (Bangladesh, Jordan, Kuwait, Malaysia, Tunisia, United Arab Emirates, Bahrain, Sudan and Turkey). Inflation has a significant positive impact on the profits of Islamic banks, which is another finding in this study. This relationship is also found by Bashir (2000), Haron (2004), Khediri and Khedhiri (2009) and Smaoui and Ben Salah (2011).

However, inflation is found to have no impact on banks' profitability by Hassan and Bashir (2003) which examines the relationship between the profitability of Islamic banks in both the internal and external characteristics using cross-country bank level data for the period of 1994-2001. They have also found that the gross domestic product per capita has a limited impact on profitability. Gross domestic product per capita is found by Bashir (2000), to have a positive impact on Islamic banks' profitability.

Another significant macroeconomic factor discovered in other studies is the gross domestic product. Khediri and Khedhiri (2009) examine the determinants of Islamic banks' profitability in the Middle East and North Africa regions, during the years of (1999-2006). They estimate several specifications to study the impact of bank-specific and country-specific variables, including macro-economic conditions, market structure and institutional development on bank profitability. They find that bank profitability is positively associated with economic growth. Hassan and Bashir (2003) and Smaoui and Ben Salah (2011) have also found a positive relationship between the GDP and profitability of the banks they study. Also, Ahmad and Noor (2011) investigate the profitability of 78 Islamic banks in 25 countries for the period of 1992-2009 using the fixed effect model to analyze the profitability and have found that favorable economic conditions exhibit a positive relationship with profit.

Bank specific factors (internal determinants) such as capital ratios, overhead, loan and liquidity ratios have been shown to be equally important in determining the profitability of banks. Hassan and Bashir (2003) find the positive relationship between capital ratios and profitability of the banks; also they have found a negative relationship between loan and profitability, but no relationship is found between the

overhead and profitability. Bashir (2000) examines the relationships between Islamic banks' profitability and banking characteristics using data for 14 Islamic banks in the Middle East during the period of 1993-1998. The internal determinants used in this study are capital ratios, overhead, loan and liquidity ratios, while the external determinants include macroeconomic indicators and the financial structure. Return on assets and return on equity ratios are used as profitability measures. The study finds that there is a positive association between profitability and overhead expenses which means that the expense preference behavior appears to exist in the Islamic banking market. In addition, the results indicate that the short-term funding has a positive impact on Islamic banks' profitability. Also, loan ratio, foreign ownership and increases in capital tend to affect profitability positively. However, Bashir (2003) examines the determinants of Islamic banks' performance across 8 Middle Eastern countries between 1993 and 1998. The study indicates that adequate capital ratios and loan portfolios play an important role in explaining the performance of Islamic banks. The results also indicate the non-interest earning assets and overhead promote bank profits.

Haron (2004) introduces several variables in his study, whereby the application of these variables is in line with the modus operandi of Islamic banks which differs from that of the conventional banks. Profit-sharing (Mudarabah, Musharaka), mark-up (Murabahah) and investment activities are deemed necessary, given that Islamic banks operate in accordance with the Shari'a principles. All three sources of funds for Islamic banks are positively related with profitability. The findings serve as an indicator that the more deposits placed by depositors in the bank, the more income is received by the bank. This study also validates the current practices of Islamic banks which use mark-up principles in their financing activities. This is because an application of profit-sharing principles will have an inverse relationship with profitability. Also, no significant relationship is found between liquidity and mark-up and the profitability measures. In terms of expense management, the positive relationship between profitability and total expenses constitutes the normal characteristics of a firm.

Smaoui and Ben Salah (2011) examine how bank-specific characteristics and the macroeconomic environment affect the profitability of Islamic Banks in the Gulf Cooperation Council. The panel data of 44 Islamic Banks over the period of 1995-

2009 is used. The results find that capital strength is positively and significantly related to the profitability of Islamic banks, but the impact of liquidity on bank profitability is insignificantly related. The results also show that overhead and cost to income ratio are negatively and significantly related to profitability. In addition, the results indicate that the capital ratio and the overhead ratio have a positive and significant impact on Islamic bank's performance. Ahmad and Noor (2011) establish that profit is positively and statistically significant with operating expenses, and non-performing loans.

Bank size and concentration ratio as financial structure factors are also important determinants of bank profitability. Haron (1996) finds that bank size has a positive impact on the profits of Islamic banks. Also, Haron (2004) and Smaoui and Ben Salah (2011) have found that bank size has a positive impact on the profits of Islamic banking. However, Hassan and Bashir (2003) have found that bank size has a negative impact on profitability. In relation to the concentration ratio, Hassan and Bashir (2003) and Khediri and Khedhiri (2009) discover that bank profitability is positively associated with bank concentration.

From studies above it can be concluded that the macroeconomic indicators; gross domestic product per capita, growth rate of gross domestic product and inflation have significant impact on Islamic banks' performance. Bank specific factors; capital ratios, overhead, loan, foreign ownership and efficiency are significantly related to Islamic banks' profitability as well. Additionally, the financial structure factors; bank size and concentration ratio are also determinants of Islamic banks' profitability. The previous studies above have shown that return on assets and return on equity commonly used to measure the profitability of Islamic banks.

### **3.5 Previous Studies on Determinants of Islamic and Commercial Banks' Profitability**

In literature, there are some studies which have analyzed Islamic banks' profitability. However, only a few studies have analyzed the determinants of Islamic and commercial Banks' profitability. In the literature that compares the bank's profitability, Hassoune (2002) examines Islamic banks' profitability in an interest rate cycle during the period of 1994-2001. The study has found that Islamic banks are certainly more profitable than their conventional peers which enjoy the same balance sheet structure. The main reason for such a difference is that Islamic banks benefit from a market imperfection, i.e. the availability of large amounts of non-remunerated deposits in their books, which considerably decreases the cost of funding. Alkassim (2005), in turn, analyses the profitability of Islamic and conventional banking in the Gulf Cooperation Council over the period of 1997-2004. The GCC has been chosen as a focal point for the study, since there are substantial revenues from oil trade. The results indicate that conventional banks in the GCC have better asset quality compared to Islamic banks, but Islamic banks are better capitalized.

Al Manaseer (2007) evaluates the determinants of profitability in Islamic and non-Islamic banks. The sample comprises of 69 non-Islamic banks and 21 Islamic banks located in Jordan, Egypt, Saudi Arabia and Bahrain, while the sample period spans over 1996 to 2003. The empirical results shed light on the relationship between determinants and profitability. First of all, the panel models emphasize the importance of the size of the bank in stimulating profitability for both traditional and Islamic banks, while the pooled models indicate that the size takes more importance for Islamic banks. Secondly, the study finds a negative impact of total deposits to-total assets ratio on banks' profitability. Thirdly, the loans-to-total assets ratio has a negative and statistically insignificant impact on the banks' return on assets and return on equity in the pooled models. Next, the equity-to-total asset ratio has a positive and statistically significant impact on return on assets in the fixed effects and the pooled models. Also, the overhead-to-total assets ratio has a negative and statistically significant impact on return on equity in the fixed effects model only, while it has a positive and insignificant effect on return on assets using the fixed effects and the pooled models. The gross domestic product per capita also has a positive and highly

statistically significant impact on the banks' return on assets and return on equity in the pooled model. In contrast, it has a negative impact in the fixed effects model. Also, the gross domestic product growth rate has a positive impact on the banks' return on assets and return on equity in the pooled and the fixed effects models. Apart from that, the inflation rate has a positive and highly significant impact on return on assets and return on equity using the fixed effects as well as the pooled models. Next, the concentration ratio has a negative and statistically significant impact on return on assets and return on equity in the pooled models; it has an insignificant impact in the fixed effects models.

El Biesi (2010) examines the profitability of foreign banks in nine (Middle East and Northern Africa) economies from 2002 to 2007. Using a panel dataset of 71 foreign banks, the study investigates the impact of selected macroeconomic, financial market and bank specific determinants on foreign banks' profitability and the effect of the provision of Islamic financial services. The results suggest that the most significant factors affecting foreign banks' profitability are capital, total assets and liquidity ratios at bank level, and stock market capitalization, level of income per capita growth on macro and banking industry levels. The findings suggest that there is an adverse influence of the provision of Islamic financial services which could be a result of the slowing development of the new Islamic financial services intermediary market in MENA.

Yu Han and Gan Pei-Tha (2010) examine the determinants of the banking sector development in Malaysia. The data set consists of quarterly data for the period of q1 1980 to q4 2007. The empirical results suggest that higher GDP will strengthen the banking sector development. Also, the real interest rates and trade openness are not statistically significant determinants of the banking sector development. The study finds that financial liberalization actually appears to destabilize the banking sector development.

Zeitun (2012) uses the panel data analysis to investigate the determinants of the profitability of Islamic and conventional banks in Gulf Cooperation Council countries, during the period of 2002-2009. The findings show that bank's equity is important in explaining conventional banks' profitability. The cost-to-income has a negative and

significant impact on Islamic and conventional banks' performance. The results also show that, bank's age and the banking development have no effect on bank performance. The study finds that GDP is positively correlated to bank's profitability, while inflation is negatively correlated to bank's profitability. Similarly, Rahman *et al.*, (2012) analyze the internal determinants of profitability of conventional and Islamic banks in Pakistan for the period of 2006-2010. The results have found that greater bank size is negatively related to higher profit. The study finds that capital and deposits are positively correlated to a bank's profitability.

In summary, the above literature provides an examination of the effects of internal factors (bank-specific) and external factors (macroeconomic and financial structure) on bank profitability. Some findings of these studies differ from other studies due to the datasets, environments and markets that differ across the various studies. However, there are common factors influencing profitability. The results of El Biesi (2010) point to the fact that higher capital and greater income per capita growth are associated with greater profitability of banks, whereas, higher liquidity is associated with lower profitability of banks. The results of Al Manaseer (2007) reveal that higher capital, greater gross domestic product per capita, greater gross domestic product growth rate and higher inflation have been linked with greater profitability of banks. However, greater deposits, greater loans, higher overhead and higher concentration have been associated with the banks' lower profitability. The results of Zeitun (2012) have also suggested that higher capital and greater gross domestic product growth have been associated with greater profitability, while higher overhead and higher inflation have been associated with lower profitability of banks. The results of Rahman *et al.*, (2012) establish the fact that greater deposits and higher capital are linked with greater profitability, while larger banks have been linked with lower profitability.

### 3.6 Previous Studies on Determinants of Conventional Banks' Profitability

There is an extensive literature that seeks to identify the determinants of commercial banks' profitability. While some studies focus on the understanding of bank profitability in a particular country, others concentrate on a panel of countries. Thus, this part is divided into three sections: single country studies (Malaysia), single country studies (other country) and panel country studies:

#### 3.6.1 Single country studies (Malaysia)

Guru *et al.*, (1999) use the linear model to analyze the pooled cross section time series data to isolate the profitability determinants of Malaysian commercial banks during the period of 1985 to 1998. Profitability ratios of the ROA and ROE are used in this study as dependent variables. In addition the external and internal determinants have been included in this study. In line with this, Sufian (2010a) examines how regulation and supervision affect the profitability of the Malaysian banking sector, using bank-level data, during the period of 1992–2003. Also, Said and Tumin (2011) investigate the impact of bank-specific factors of commercial banks in Malaysia and China for the period of 2001 to 2007. The data set consists of 4 state-owned commercial banks in China and 9 local commercial banks in Malaysia. Return on average assets (ROAA) and return on average equity (ROAE) are used. In another study, Jasmine *et al.*, (2011) use eight commercial banks in Malaysia during the time line from 2004 till 2010 to find out the profitability determinants of these banks after the 2008 financial crisis. The independent variables which are chosen are namely the gross domestic production, inflation rate, capital adequacy ratio, total income, expenses management, total loans, total deposits, and bank size.

Sufian (2010a) finds that economic growth and inflation bear some positive impact on the profitability of the Malaysian banking sector. Meanwhile, Jasmine *et al.*, (2011) find that the gross domestic production and inflation rate are insignificant in determining the profitability determinants of commercial banks in Malaysia after the financial crisis in 2008.

The results of Said and Tumin (2011) and Jasmine *et al.*, (2011) suggest that bank size does not have any influence on the profitability of commercial banks in Malaysia.

Besides the internal determinant studies of commercial banks' profitability in Malaysia, Guru *et al.*, (1999) suggest that the total expenditure to total assets variable has a negative impact on bank profitability, whereas, current account deposits of each commercial bank as a percentage of total assets has a positive impact on bank profitability. The results indicate that the liquidity variable and loans and advances of each commercial bank as a percentage of total assets have a negative impact with ROE variable, however, a positive relation between the ROA and loans and advances as a percentage of total assets is found. This study indicates that no relation is found between bank profitability and capital and reserves and time and savings deposits of each commercial bank as a percentage of total assets.

Sufian (2010a) agrees with Guru *et al.*, (1999) that Malaysian commercial banks with higher liquidity levels have lower profitability level. Said and Tumin (2011) find that operating expenses are significantly negative, related to bank performance, whereas, the liquidity of banks does not have any influence on the performance of Malaysian commercial banks. While the latter study shows that the effect of capital is not significant for Malaysian commercial banks, one study by Jasmine *et al.*, (2011) finds that capital adequacy ratio is significant. The latter study shows that the internal variables, or namely expenses management, total loans and total deposits are insignificant in determining the profitability determinants of commercial banks in Malaysia.

Previous studies done on commercial banks' profitability in Malaysia reveal various affecting factors. These could be microeconomic factors and bank specific factors. Although the above studies are conducted in the same environment and market (Malaysian commercial banks), some findings of these studies are different, which propels further studies to be conducted.

### **3.6.2 Single country studies (other countries)**

A large number of studies have been conducted about determinants of commercial banks' profitability in various countries. One of the early studies that have attempted to find out the determinants of bank profitability as single country studies was carried out by Chaudhry *et al.*, (1995) which investigates the determinants of profitability of

U.S commercial banks in the 1970s and 1980s. It is established that banks, depending on their size, may need to exercise greater control over a defined set of variables in order to maximize profits and/or minimize costs. The study provides some indirect evidence of the economies of scale/scope in certain aspects of the banks' loan and investment portfolios.

Atemnkeng and Joseph (2000) examine the determinants of profitability of the Cameroonian Commercial banking system. The analysis is based on the cross-sectional data collected from three dominant banks over the period between 1987-1999. The results indicate that the market concentration power is paramount importance in the determination of bank profitability. Furthermore, the positive effects of bank size, time and savings deposits to total deposit ratio are found.

Jiang *et al.*, (2003) investigate the factors affecting the profitability of banks in Hong Kong over the period of 1997-2002. The empirical analysis finds indicated that both bank-specific as well as macroeconomic factors are important determinants in the profitability of banks. With regards to the macroeconomic factors, real GDP growth, inflation and real interest rates have a positive impact.

Kosmidou *et al.*, (2006) investigate the impact of bank-specific characteristics, macroeconomic conditions and financial market structure on UK-owned commercial banks' profits, measured by the return on average assets and net interest margins. An unbalanced panel data set of 32 banks, during the period 1995-2002 has been used. Similarly, Li. Yuqi (2008) investigates the impact bank specific factors and macroeconomic factors on bank profitability, using the return on average assets in the UK banking industry over the period 1999-2006. The results of both studies indicate that capital strength is one of the main determinants of UK banks and that it has a positive dominant influence on their profitability. The results of Kosmidou *et al.*, (2006) establish that efficiency in expenses management, GDP growth, inflation and concentration ratio are a positive and significant impact on profitability, Li. Yuqi (2008) have found that inflation and GDP growth have insignificant impact on profitability. The latter researcher has also found that the impact of loan loss reserves has a significant negative impact on profit.

Kosmidou *et al.*, (2006) have also discovered that bank size is negatively related to banks' profitability.

Sufian and Chong (2008) examine the determinants of Philippines banks' profitability during the period of 1990–2005. The findings suggest that the bank-specific variables have a significant impact on bank profitability. The study finds that bank size and inflation are negatively related to banks' profitability, whereas non-interest income and capitalization have a positive impact.

Bennaceur and Goaid (2008) investigate the impact of bank's characteristics, financial structure and macroeconomic indicators on bank's net interest margins and profitability in the Tunisian banking industry for the 1980-2000 period. They find that: Firstly, high net interest margin and profitability tend to be associated with banks that hold a relatively high amount of capital, and with large overheads. Other important internal determinants of bank's interest margins' bank, loans which have a positive and significant impact. Secondly, the study finds that the macro-economic indicators such as inflation and GDP per Capita growth have no impact on bank's interest margins and profitability. Thirdly, turning to financial structure and its impact on bank's interest margin and profitability, it finds that concentration, rather than competition is less beneficial to the Tunisian commercial banks.

Vong and Chan (2008) examine the impact of bank characteristics, macroeconomic and financial structure variables on the profitability of the Macau banking industry during the period of 1993-2007. The results show that the capital strength of a bank is importance in affecting its profitability. On the other hand, smaller banks, achieve higher return on assets than larger ones. This may be due to that inter-bank market is competitive and efficient since banks with a large retail deposit-taking network do not necessarily gain a cost advantage. Concerning the macro-economic indicators, only the inflation rate plays an important positive role in explaining the banks' return on assets.

Aburime (2008a) identifies the company-level (internal variables) determinants of bank profitability in Nigeria, using a panel data of 33 banks over the 2000-2004 periods. The regression results reveal that capital size and ownership concentration

significantly determine bank profitability in Nigeria. Aburime (2008b) investigates the macroeconomic (Macroeconomic variables) determinants of bank profitability in Nigeria, using a panel data of 154 banks over the 1980-2006 period and macroeconomic indices over the same period. The results show that, real interest rates and inflation have a positive and statistically significant impact on bank profitability, while, exchange rate is negative and can significantly determine bank profitability in Nigeria. Aburime (2008c) identifies the significant industry-level (structural variables) determinants of bank profitability in Nigeria, using a panel data of 138 banks over the 1980-2007 periods. Results indicate that competition level in the Nigerian banking industry and the degree of foreign ownership of the industry have negative relationships with the profitability of banks operating in Nigeria.

Athanasoglou *et al.*, (2008) examine the effect of bank-specific, industry-specific and macroeconomic determinants of bank profitability using a panel of Greek banks that covers the period of 1985–2001. The results have found that capital is important in explaining bank profitability. Bank size is not related to bank profitability. Also, no evidence is found in support of the structure-conduct-performance theory. Concerning the macro-economic indicators, the inflation has affected the performance of Greek banks.

Garcia-Herrero *et al.*, (2009) analyze the profitability of Chinese banks for the period of 1997– 2004. This study finds that better capitalized banks tend to be more profitable. The results also suggest that a less concentrated banking system increases bank profitability.

Sufian (2010b) examines the developments in the Thailand banking sector's profitability during the post Asian financial crisis period of 1999-2005. The results suggest that bank size and capitalization exhibit positive and significant impacts on Thailand banks' profitability, but both non-interest income and overhead have a negative relationship with bank profitability. As for the impact of macroeconomic indicators, the study finds that higher economic growth and inflation contribute positively to Thailand banks' profitability, while per capita GDP carries a negative impact.

Al-Jarrah *et al.*, (2010) analyze the determinants of the Jordanian banks' profitability over the period of 2000-2006, utilizing the co-integration and error correction models on Jordanian banks. The findings reveal that the most important internal determinants of the banks' profitability are the loans ratio, the operating expenditures ratio, the capital structure, the deposit ratio and non operating expenditures ratio. On the other hand, inflation is the most important external determinants of profitability over the same period.

Dietrich and Wanzenried (2010) examine how bank-specific characteristics, macroeconomic variables and industry-specific factors affect the profitability of 453 commercial banks in Switzerland over the period from 1999 to 2008. The results show that there are differences in profitability among the banks. The finding for the main profitability measure, return on average assets, is that better-capitalized banks seem to be more profitable. Furthermore, bank age has a significant impact on banking profitability; the result indicates that young banks seem to be more profitable than their older counterparts; this may be due to, younger banks more efficient in terms of their IT infrastructure.

Sufian and Habibullah (2010a) examine the determinants of Indonesian banks' profitability during the period of 1990–2005 using fixed effects model. The return on asset ratio is used as proxy for profitability. The findings indicate that income diversification and capitalization are positively related to bank profitability, while size and overhead costs exert negative impacts. The impact of the economic growth and banking sector concentration has been noted to be positive during the pre-crisis and crisis periods.

Sastroswito and Suzuki (2011) analyze the determinants of the post-crisis Indonesian banking system profitability. The panel data include 116 banks for the period of 2001-2008. The return on asset is used as the proxy for profitability. The effect of bank-specific, industry-specific and macroeconomic determinants is examined. The results show that expenses management has a negative and significant impact on profitability, while capitalization and loans have a positive and significant impact on profitability. The results find the support of the structure-conduct-performance hypothesis, indicated by a positive and significant effect of concentration

on profitability. The inflation and bank size have an insignificant effect on bank profitability.

Davydenko (2011) examines the determinants of bank profitability in Ukraine. The study uses a panel of individual banks' financial statements from 2005 to 2009. This study finds that the loans, administrative expenses, deposits and foreign ownership have a significant negative impact on bank profitability. The findings also indicate that the capital, bank size, inflation and GDP are positively related to banks' profitability. But, the liquidity has appeared insignificant for determining profitability.

Ali *et al.*, (2011) examine the profitability indicators of 22 public and private commercial banks of Pakistan that cover the period of 2006-2009. The return on assets and return on equity are used as profitability measures to determine the effect of bank-specific and macroeconomic indicators on profitability. The findings indicate that the economic growth establishes a positive and significant relation with profitability. The operating efficiency tends to exhibit the higher profitability level as measured by the return on equity. The capital and inflation rate result shows a negative and significant relation with return on assets. Similarly, Javaid *et al.*, (2011) examine the determinants of bank profitability in Pakistan using the panel data during the period from 2004 to 2008, with a sample of 10 top banks in Pakistan. This study uses the Pooled Ordinary Least Square method to investigate the impact of assets, loans, equity, and deposits. The return on asset ratio is used as proxy for profitability. The results show that total assets (size) have a negative and significant impact on profitability. Also, the impact of loans is not significant towards profitability, while both the equity and deposits have a positive and significant impact on profitability.

Ramadan *et al.*, (2011) have looked into the relationship between the profitability of banks and the characteristics of internal and external factors. A balanced panel data set of 10 Jordanian banks over the period of 2001-2010 and fixed effects regression model are used. The ROA and ROE are utilized. Results show that capital adequacy is positive and significant. The loans to total assets are found to have a significant positive impact on the ROA and insignificant impact when using the ROE. In addition, the cost management has a negative significant impact on profitability when using the ROA, but when using the ROE the cost management does not have any

statistically significant effect on bank profitability. Concentration result shows a negative impact on the profitability. Results also show no effect of the banking sector size on bank profitability. Regarding inflation and economic growth, the results show an insignificant impact on return on assets and return on equity.

Alper and Anbar (2011) use a balanced panel data set to examine determinants of the bank's profitability in Turkey during the period from 2002 to 2010. The bank profitability is measured by the return on assets and return on equity. The findings of the study show that asset size and non-interest income have a positive and significant effect on bank profitability. Results also show that, the size of credit portfolio and loans under follow-up have a negative impact on bank profitability.

Ayadi and Boujelbene (2012) use the panel data over the period of 1995-2005 to identify the profitability determinants of twelve Tunisian deposit banks. The results suggest that the bank capitalization and bank size have a positive and significant effect on bank profitability. The results also indicate that the concentration ratio, GDP growth and inflation rate do not have a significant effect on bank profitability. The results of capitalization, concentration ratio, GDP growth and inflation rate are consistent with the results reached by Bennaceur and Goaid (2008).

From the studies above it can be concluded that: the most important variables affecting the profitability of commercial banks are bank-specific characteristics, financial structure variables and macroeconomic variables. Concerning the bank-specific characteristics, capital, deposits, loans, overhead expenses play an important role in explaining about banks' profitability. Regarding bank size and concentration ratio as the financial structure variables, they also serve as important determinants of bank profitability. As for the impact of macroeconomic variables, inflation and economic growth are the most important determinants of bank profitability. With regards to the profitability measures, the return on assets and return on equity and net interest margins are the most often used to measure the profitability of commercial banks.

### 3.6.3 Panel country studies

In the literature of bank profitability, some empirical studies have concentrated on a panel of countries. On this score, early studies attempt to identify the determinants of bank profitability provided by Short (1979) and Bourke (1989). Since then many studies have been conducted by other researchers, such as Demirguc-Kunt and Huizinga (1999). Short (1979) examines the relation between the profit rates and banking concentration in Canada, Western Europe and Japan. The result supports the view that greater concentration leads to higher profit rates.

Bourke (1989) has studied the determinants of banks' profitability in Australia, Europe, and North America. The study splits the determinants of bank profitability to internal factors such as staff expenses, capital ratio, liquidity ratio, and loans to deposit ratio and external factors such as regulation, size of economies of scale, competition, concentration, market growth, government ownership, and market power. The results show that the increase in government ownership leads to lower profitability in banking, and the results also find that concentration ratio and money supply are positively related to profitability. The results show that capital and reserves to total assets as well as cash and bank deposits to total assets are both positively related to profitability.

Demirguc-Kunt and Huizinga (1999) investigate the determinants of commercial bank interest margins and profitability using bank-level data for 80 developing and developed countries in the years of 1988-1995. The study finds that there is a positive relationship between equity to total assets and bank profitability. This study also establishes that there is a negative impact of gross domestic product per capita on return on capital. Furthermore, the inflation rate has a positive and highly significant impact on return on assets and return on equity. Finally, a lower market concentration ratio leads to lower profits.

Demirguc-Kunt and Huizinga (2000) examine the impact of financial development and structure on bank profitability using bank-level data during the 1990-1997 period, and for a large number of developed and developing countries. The empirical evidence suggests that banks have higher profits and margins in un-developed

financial systems. In developed financial systems, results indicate that greater bank development lowers bank profits and margins. Controlling bank and market development, and the financial structure per se does not have an independent effect on bank performance.

In European banks' case, Goddard *et al.*, (2004) investigate the profitability of European banks during the 1990s, using cross-sectional, pooled cross-sectional time-series and dynamic panel models. The study finds that the relationship between the importance of off-balance-sheet business in a bank's portfolio and profitability is positive for the UK, but it is either neutral or negative elsewhere. This study also marks that the relationship between the capital ratio and profitability is positive.

Athanasoglou *et al.*, (2006) also study the profitability behavior of bank-specific, industry-related and macroeconomic determinants, using the ROA and ROE over the period of 1998–2002, where the study has used an unbalanced panel data set of South Eastern European banking industry. The results show that a positive significance of the capital variable which affects banks' profitability. Also, the operating expenses, as a variable, present a negative and significant effect on profitability. The estimation results suggest that, the effect of concentration is positive, which provides evidence in support of the structure-conduct performance hypothesis. However, the effect of bank size on profitability is positive and statistically significant. As for macroeconomic variables, the results indicate that the inflation positively and significantly affects profitability. On the other hand, the GDP per capita does not seem to have any significant effect on bank profitability.

Research in African banks; Flamini *et al.*, (2009) use a sample of 389 banks in 41 Sub-Saharan Africa countries over the period of 1998–2006 to study the determinants of bank profitability. The study finds that, firstly; the coefficient of equity is positive and highly significant, meaning that well capitalized banks tend to experience higher returns. Secondly, market concentration has no direct effect on bank profitability. Thirdly, the results show a positive, but insignificant effect of overhead costs on bank profitability. Fourth of all, the inflation has a positive effect on bank profits. Fifth, the GDP growth has a positive impact on bank profitability, while the GDP per capita does not seem to affect bank returns in a significant manner.

Summarizing the results from previous studies of commercial banks' profitability (Panel country) the internal and external factors, capital ratio, deposit ratio, loans, overhead, liquidity ratio, concentration ratio, bank size, GDP growth, GDP per capita and inflation are correlated differently with profits. These factors are considered as important determinants of performance. Furthermore, the panel data analysis is an appropriate method for panel country studies.

### **3.7 Previous Studies Related to the Impact of Financial Crises on Bank Performance**

Studies related to the impact of financial crises on bank performance have focused on a specific country, while others have concentrated on panel countries. Regarding a specific country, Sufian and Habibullah (2010a) examine the determinants of Indonesian banks' profitability during the period of 1990–2005. The findings indicate that the impact of economic growth and banking sector concentration are positive during the pre-crisis and crisis periods. Moreover, the Asian financial crisis exerts a negative and significant impact on the profitability of Indonesian banks.

Also, Sufian and Habibullah (2010b) use the data envelopment analysis (DEA) method to examine the efficiency of the Thai banking sector from 1999 to 2008. The findings suggest that the recent global financial crisis 2008 exerts a negative impact on the efficiency of Thai banks.

In a panel of countries' case, Hasan and Dridi (2010) examine the performance of Islamic banks and conventional banks during the recent global crisis 2008 by looking at the impact of the crisis on profitability, credit and asset growth. The data were collected from about 120 Islamic banks and conventional banks in Bahrain, Jordan, Kuwait, Malaysia, Qatar, Saudi Arabia, Turkey, and the UAE. The results suggest that Islamic banks of these countries have been affected differently during the crisis than the conventional banks. Factors related to the Islamic banks' business model help limit the adverse impact on profitability in 2008, while weaknesses in risk management practices in some Islamic banks have led to a larger decline in profitability in 2009 compared to conventional banks.

Ahmad and Noor (2011) use the fixed effect model and an unbalanced panel data to examine the impact of 1998 and 2008 financial crises. This study examines the profitability of the world Islamic banks that consist of 25 countries namely Bahrain, Bangladesh, Brunei, Egypt, Gambia, Indonesia, Iran, Iraq, Jordan, Kuwait, Malaysia, Mauritania, Pakistan, Palestine, Saudi Arabia, Singapore, Syria, Thailand, Turkey, United Arab Emirates, Qatar, Yemen, South Africa, Sudan and Yemen during the period of 1992-2009 with 78 Islamic banks involved. The result shows that the 1998 Asian financial crisis and 2008 global financial crisis are negative and non significant, which implies that world Islamic banks' profitability (as panel countries) does not impacted during Asian and global financial crises.

Abdulle & Kassim (2012) have conducted a comparative analysis on the impact of the global financial crisis on the profitability, liquidity and credit risk of the Islamic and conventional banks in Malaysia in a five-year period from 2006 to 2010. There is no major difference in profitability and credit risk among the Islamic and conventional banks due to the financial crisis. The Islamic banks are holding more of the liquid assets than the conventional banks, thus they are less exposed to the liquidity risks due to the financial crisis.

Rashwan (2012) concentrates on the pre- and post-2008 financial crisis to test if there are any significant differences in the performance of forty six Islamic banks and forty nine conventional banks covering fifteen countries. The findings of the study show that there is a significant difference between the Islamic banks and conventional banks in 2007 and 2009 and there are no significant differences in 2008, which indicates the effect of the crisis on both sectors.

Mehta (2012) examines the impact of the global financial crisis on financial performance indicators of all the banks listed on Abu Dhabi stock exchange during the period from 2005 to 2009. The result of the study suggests that the global financial crisis had decreased the United Arab Emirates banks' profitability measured by both the return on assets and return on equity.

### **3.8 Previous Studies on Profitability and Efficiency Differences between Domestic and Foreign Banks**

There are limited studies interested in comparing the profitability determinants of domestic and foreign banks. Elyor (2009) analyses and compares the profitability of domestic and foreign commercial banks operating in Malaysia for the period from 2004 to 2008. The multiple regression analysis has been chosen to identify the determinants of the performance of the foreign and domestic banks. The study has discovered that foreign banks have strong capital, but the statistics show that domestic banks are more profitable. The findings also suggest that bank performance (including ROA and ROE) of commercial banks in Malaysia is influenced by the capital adequacy ratio, total loans to total assets ratio, interest expenses to total loans, total operating profit to revenue and loans to deposit ratio.

Awdeh (2005) examines the profitability differences between domestic and foreign banks operating in Lebanon during the period of 1993 - 2003 using an unbalanced panel dataset. The study splits the sample into three categories: domestic banks with domestic banks' control, domestic banks with foreign control and foreign banks. The results establish that foreign banks are more profitable than all domestic banks regardless of their ownership structure. Furthermore, the results indicate that the determinants of domestic banks and foreign banks' profitability are different. Moreover, domestic banks are more affected by the Lebanese macroeconomic factors (inflation and GDP) than foreign banks.

Fotios and Kyriaki (2007) examine how bank's specific characteristics and the overall banking environment affect the profitability of commercial domestic and foreign banks operating in the fifteen EU countries over the period of 1995–2001. The results indicate that the profitability of both domestic and foreign banks is affected not only by bank's specific characteristics but also by the financial market structure and macroeconomic conditions. Firstly, the equity to assets is positively related to return on average assets. Secondly, the impact of GDP growth and inflation on profitability is positively related to domestic banks and negatively related to foreign banks. Thirdly, the results have indicated that liquidity and short term funding are statistically significant and positively related to the profitability of domestic banks. Forth, the

relation between size and bank's performance is negative. Finally, the concentration has a positive and significant impact on foreign banks' profits, whereas, the concentration has a negative but not a significant impact on domestic banks' profits.

More recently, Azam *et al.*, (2012) analyse and compare the profitability of domestic and foreign banks operating in Pakistan's banking market between 2004 and 2010 on quarterly basis. Through the regression analysis, the study has found that foreign banks are more profitable than all domestic banks and that domestic and foreign banks have different profitability determinants, i.e. factors that are important in shaping domestic banks' profitability are not necessarily important for the foreign banks, and vice versa.

Apart from comparing the profitability determinants of domestic and foreign banks, there are few studies which are interested in comparing the efficiency levels of domestic and foreign banks. Mokhtar *et al.*, (2006) investigate the efficiency of the full-fledged Islamic banks, Islamic windows and conventional banks in Malaysia from 1997 to 2003. The study measures the technical and cost efficiency of these banks using the Stochastic Frontier Approach. The findings show that, on average, the efficiency of the overall Islamic banking industry has increased during the period of the study, while that of the conventional banks has remained stable over time. However, the efficiency level of Islamic banking is still lower than that of conventional banks. The study reveals that full-fledged Islamic banks are more efficient than Islamic windows, while Islamic windows of foreign banks tend to be more efficient than those of domestic banks.

Sufian (2006) investigates the efficiency of the Malaysian Islamic banking sector (Islamic Banking Scheme) during the period of 2001-2004. The findings suggest that the domestic Islamic banks have exhibited higher technical efficiency compared to that of their foreign peers. Although the findings suggest that the foreign Islamic banks' technical efficiency is lower compared to its domestic counterparts, the results suggest that the foreign Islamic banks have been relatively more efficient in controlling their operating costs.

Tahir *et al.*, (2010) examine the relative efficiency levels of domestic and foreign commercial banks in Malaysia during the period of 2000 – 2006. The results suggest that interest margin and operating cost are slightly higher for domestic banks than for foreign banks. Moreover, the results also suggest that profit ratios are slightly higher for foreign banks relative to domestic banks. In addition, the results indicate that domestic banks are found to be more cost-efficient but less profit - efficient in relation to foreign banks.

Sufian and Habibullah (2010b) examine the efficiency of the Thai banking sector from 1999 to 2008 and discover that domestic banks have relatively more efficient than their foreign bank counterparts.

As seen above, there are limited studies which seek to find out the differences in profitability determinants and efficiency levels between domestic and foreign commercial banks in Malaysia, and to the best of my knowledge there are no studies conducted to look into the differences in profitability determinants between domestic and foreign banks in the Malaysian Islamic banking sector.

### **3.9 Previous Studies on the Relationship of Profitability and Efficiency Banks**

There are some empirical studies conducted to find out the relationship between profitability and efficiency banks. These studies have focused on a specific country or panel countries. For example, for a single country, studies based on Malaysia (Sufian(a), 2007), Korea (Park and Weber, 2006), Turkia (Abbasoglu *et al.*, 2007), Sri Lanka ( Seelanatha, 2007) have struck as prominent.

In the case of Malaysia, Sufian (2007a) utilises the Data Envelopment Analysis (DEA) methodology to examine the efficiency of the Islamic banking industry in Malaysia. The results also suggest that profitability is significantly and positively correlated to all efficiency measures.

In Korea, Park and Weber (2006) identify the major determinants of profitability in the Korean banking sector for the period of 1992–2002. The results indicate that bank

efficiency has a significant effect on bank profitability. They also find that the major determinants of bank profitability in Korea have changed between pre- and post-Asian financial crisis periods.

In Turkey, Abbasoglu *et al.*, (2007) use the Turkish banking sector that operated between the years 2001 and 2005 to explore the relationship between efficiency and profitability of the banks in the post-crises. Using return on assets and return on equities as a measure of profitability, the relationship between the efficiency and profitability is not confirmed by the panel regression estimated.

In Sri Lanka, Seelanatha (2007) uses the non-parametric Data Envelopment Analysis (DEA) to measure efficiency of banks in Sri Lanka during the period from 1989 to 2004. The results show that technical efficiency has a positive relationship with the profitability of banks.

### **3.10 Previous Studies on Banks' efficiency**

There are several studies which have evaluated the efficiency in banks. However, the studies which have analyzed the determinants of banks efficiency are limited. In the literature on determinants of banks' efficiency, particularly in Malaysia, Zamil (2007) uses Islamic commercial banks and commercial banks in Malaysia over the period of 2000-2004 to examine the influence of the banks' specific characteristics bank size, profitability, market power, non-performing loans and bank capitalization on the efficiency measures resulting from the Data Envelopment Analysis (DEA) using linear regression tests. The study has found that bank size is significantly positive associated to technical efficiency and scale efficiency and non-performing loans is also significantly positive, when associated to scale efficiency. On the other hand, market power is negatively significant as it is associated to technical efficiency and scale efficiency, and bank capitalization is negatively significant as it is associated to pure technical efficiency. Furthermore, it is also found that, there is no link between profitability and efficiency measures.

Sufian (2007b) investigates the efficiency of the Malaysian banking sector around the Asian financial crisis in 1997. The efficiency estimates of individual banks are evaluated by using the Data Envelopment Analysis (DEA) approach. The empirical findings clearly bring forth the high degree of inefficiency in the Malaysian banking sector, particularly a year after the East Asian crisis. The regression results suggest that efficiency is negatively related to gross domestic product and bank's market share, while bank efficiency is positively related to loan intensity and the bank size.

Ismail *et al.*, (2012) have utilized Tobit regression analysis to identify the determinants of Islamic and conventional banks' efficiency in Malaysia over the period of 2006 to 2009. The results indicate that capitalization and bank size are positively associated to efficiency. Also, the results show that loan quality and bank expenses are found to be negatively associated to efficiency.

Sufian *et al.*, (2012) employ the Data Envelopment Analysis method to compute the efficiency. Also, the panel regression analysis based on the Generalized Least Square method is employed to examine the internal and external factors which influence the efficiency of the Malaysian domestic Islamic banks during the period 2006 to 2010. The results find that capitalization, market power, liquidity, gross domestic product and bank size have positive relationships with Malaysian Islamic banks' efficiency, whereas, the inflation exerts negative influence on Islamic banks' efficiency. Also, the study suggests that revenue efficiency is significantly lower for the Malaysian domestic Islamic banks compared to their foreign Islamic bank counterparts.

There are also studies on the determinants of bank efficiency on other countries, where Favero and Papi (1995) implement the non-parametric Data Envelopment Analysis on a cross section of 174 Italian banks taken in 1991 to investigate determinants of banks' efficiency in Italy. In addition, the regression analysis is used with variables such as firm size, productive specialization, ownership, market structure and localization. The study finds that efficiency is best explained by productive specialization size.

Seelanatha (2007) has used a non-parametric Data Envelopment Analysis (DEA) to measure the efficiency of banks in Sri Lanka during the period from 1989 to 2004.

Microeconomic, macroeconomic and other factors affecting banks' efficiency are used. These factors are assets quality, capital strength, fixed assets to total assets, gross interest margin, liquidity, profitability, loans, bank size, stock market capitalization, GDP growth, inflation ratio, privately-owned banks and old banks. The results show that technical efficiency has positive relationships with variables of capital strength, profitability, loans, liquidity and stock market capitalization; and negative relationships with old banks.

Sufian and Habibullah (2010b) use the data envelopment analysis (DEA) method and Tobit regression models to examine the efficiency of the Thai banking sector from 1999 to 2008. The results of the regression analysis reveal that capital strength and loans are positively related to the efficiency of banks. The findings suggest that the recent global financial crisis 2008, credit risk and bank size are negatively related to bank efficiency, whereas the inflation, gross domestic product and concentration have an insignificant impact on bank efficiency.

Garza-Garcia (2012) applies the Data Envelopment Analysis (DEA) methodology and the Tobit model to find out the main determinants of bank efficiency in the Mexican banking industry during 2001-2009. The results of the Tobit regression analysis reveal that capital, loans, GDP growth and foreign ownership are positively related to the efficiency of banks. The findings suggest that expenses and inflation rate are negatively related to bank efficiency. On the other hand, profitability ratio, bank size and concentration have insignificant impact on bank efficiency.

Shah *et al.*, (2012) investigate the effect of banks' specific factors on efficiency and compare the efficiency of Islamic banks and conventional banks using data from banking statistics of Pakistan for the year 2001 to 2008. The data envelopment analysis (DEA) is used for the measurement of efficiency; also for the effect of banks' specific factors on efficiency, Tobit regression model is used. The findings also, indicate that markup expenses, liability, profit and ownership have significant impact on technical efficiency. On the other hand, bank size and markup revenue are insignificant in its relationship with technical efficiency.

In the literature of the banks' efficiency determinants, few studies have concentrated on a panel of countries. Casu and Molyneux (2003) examine the determinants of European bank efficiency between 1993 and 1997, using the Tobit regression model approach and employing the non-parametric. The results show that the average capital ratio and the return on average equity explain the variations in bank efficiency levels.

Grigorian and Manole (2006) examine determinants of the efficiency of Commercial Banks in 17 countries (from Central Europe, Eastern Europe, Baltic Republics and Commonwealth of Independent States) in the years 1995–1998. The study has used Tobit regression to test the relationships of the data envelopment analysis which estimates the efficiency scores with commercial bank-specific variables, macroeconomic variables and regulatory variables. The findings have further indicated that equity capital ratios, market concentration, foreign ownership, capital adequacy and GDP per capita are positively related to bank efficiency. Furthermore, bank age and inflation are insignificant when related to bank efficiency.

Noor and Ahmad (2012) investigate the efficiency determinants of Islamic bank sectors in 25 countries during the period of 1997–2009. Based on the Tobit model, the studies find a positive relationship between bank efficiency and GDP, bank size, capitalization, operating expense and profitability. Also, the results show that loans have a negative relationship with bank efficiency. On the other hand, the deposits, inflation and 2008 global financial crisis have an insignificant negative relationship with bank efficiency.

Johnes *et al.*, (2012) use the Data Envelopment Analysis of a consistent sample of Islamic and conventional banks located in 19 countries over the period of 2004 to 2009 to compare the performance of Islamic and conventional banks. The type efficiency results provide strong evidence that Islamic banking is less efficient than conventional banking.

In the literature of the non-bank financial institutions' efficiency, Worthington (2001) investigates the factors that influence post-merger efficiency in co-operative deposit-taking institutions in Australia during the period of 1993 to 1997, using an unbalanced panel data set and Tobit regression model. The nonparametric technique of the data

envelopment analysis is used to measure the efficiency. The results indicate that credit unions with a higher proportion of real estate and commercial loans, a higher level of non-interest income, and a higher expenditure on information technology has high technical efficiency.

The previous studies above have shown that the variables affecting the banks' efficiency can be bank-specific characteristics, financial structure variables and macroeconomic variables. With regard to the efficiency measures, the Data Envelopment Analysis (DEA) and the Stochastic Frontier Approach (SFA) methodologies are the most often used to measure the banks' efficiency. It is pertinent to note that, the Tobit regression is the appropriate methodology to identify the main determinants of bank efficiency.

### 3.11 Summary of the Previous Studies

The previous studies above have provided a platform and support to examine the objectives of the study. The results of the previous studies for the variables indicate that most of the relations are consistent with what is expected, but some of the relations are not consistent with what is expected. On the other hand, the findings of some studies are different, although these studies are conducted in the same environment and market, which lends strong support to conduct this study. The following Table summarizes the most important studies.

**Table 3.1 the summary of the previous studies**

Forms of study	Basis	Authors	Period of study	Results
Determinants of Islamic banks' profitability	<b>Single country:</b> <i>Malaysia</i>	Sanusi and Ismail (2005)	1995 - 2004	High profitability tends to be associated with: high ratio of total loans, pay higher <i>zakat</i> , and growth of total assets. GDP growth has no impact on bank profitability.

	<i>Malaysia</i>	Pratomo and Ismail (2006)	2005-2008	Equity capital ratio has a negative and significant relation with bank profitability. Size of bank has an insignificant effect on bank profitability.
	<i>Malaysia</i>	Wasiuzzaman and Tarmizi (2010)	2005-2008	Capital and asset quality have an inverse relationship with bank profitability. Liquidity, operational efficiency, GDP and inflation have a positive relationship with bank profits.
	<i>Malaysia</i>	Idris, <i>et al.</i> , (2011)	2007-2009	Bank size is the most important factor in explaining the variation of profitability for Islamic banking institutions in Malaysia.
	<i>Malaysia</i>	Choong <i>et al.</i> , (2012)	2006 - 2009	Credit risk is the most significant factor in the performance of Islamic banks. GDP per capita has no impact on Islamic banks profitability.
	<b>Single country:</b> <i>Jordan</i>	Al Harahsha (1999)	1985-1997	There is a positive association between profitability and capital ratio and managerial efficiency. There is a negative association between profitability and liquidity ratio.
	<i>Sudan</i>	Bashir (1999)	1979 - 1993	Bank size and profitability measures of the bank are statistically significant.
	<i>Pakistan</i>	Akhtar <i>et al.</i> , (2011)	2006 - 2009	Capital adequacy ratio has a significant and positive relation with bank profitability. The

				operating expenses have a negative and significant relation with profitability. Bank size has an insignificant relation with profitability.
	<i>Jordan</i>	Khrawish <i>et al.</i> , (2011)	2005 - 2009	There is a significant and positive relationship between ROE and bank size. There are significant and negative relationships between ROA and bank size, GDP Growth and inflation rate.
	<b>Panel countries</b>	Haron (1996)	1982-1994	Bank size and inflation have a significant positive impact on the profits of Islamic banks.
		Bashir (2000)	1993-1998	Loan ratio, foreign ownership, increases in capital, overhead expenses and short-term funding have a positive impact on banks' profits. GDP per capita and inflation also have a significant positive impact on bank profits.
		Hassan and Bashir (2003)	1994-2001	Capital ratios, GDP and concentration have a positive relationship with profitability. Loan and bank size have a negative impact on profitability. GDP per capita has a limited impact on profitability. No impact is found between overhead & inflation and profitability.

		Bashir (2003)	1993-1998	Bank profitability responds positively to the increases in capital and loan ratios. Non-interest earning assets and overhead are important in promoting bank profits. The tax factors are much more important in the determination of bank performance.
		Haron (2004)	1982-1994	Deposits, total expenses, bank size and inflation have significant positive impact on the profits of banks. No significant relationship is found between liquidity and mark-up and bank profitability.
		Khediri and Khedhiri (2009)	1999-2006	Bank profitability is positively associated with economic growth, inflation and bank concentration. Capitalization and management efficiency enhances bank profitability.
		Smaoui and Ben Salah (2011)	1995-2009	Capital ratio, GDP, Inflation and bank size have significant positive impact on the profits of banks. Overhead and cost to income ratio are negatively and significantly related to profitability. Liquidity is insignificantly related to banks' profitability.

		Ahmad and Noor (2011)	1992-2009	Profit is positive and significant with operating expenses, and non-performing loans. Favorable economic conditions also exhibit a positive relationship with profit.
Determinants of Islamic and commercial banks' profitability	<i>Panel countries</i>	Al Manaseer (2007)	1996-2003	The equity ratio, overhead ratio, loans ratio, GDP per capita, GDP growth, inflation rate, concentration ratio and bank size variables are important in determining profitability of Islamic and non-Islamic banks.
	<i>Panel country</i>	El Biesi (2010)	2002-2007	The significant factors affecting foreign banks' profitability are capital total assets and liquidity ratio, stock market capitalization and level of income per capita growth.
	<i>Malaysia</i>	Yu Han and Gan Pei-Tha (2010)	1980-2007	GDP strength the banking sector development. The real interest rates and trade openness are not significant determinants of the banking sector development. Financial liberalization appears to destabilize the banking sector development.
	<i>Panel country</i>	Zeitun (2012)	2002-2009	Cost-to-income has a negative and significant impact on Islamic and conventional banks performance. Equity of bank is important in explaining

				conventional banks profitability only. GDP is positively correlated to bank's profitability. Inflation is negatively correlated to bank's profitability. Bank's age has no effect on bank performance.
	<i>Pakistan</i>	Rahman <i>et al.</i> , (2012)	2006-2010	Capital and deposits are positively correlated to bank's profitability. Size of bank has negatively related to bank's profitability. Loans are insignificantly related to banks' profitability.
Determinants of conventional banks' profitability	<b>Single country</b> <i>Malaysia</i>	Guru <i>et al.</i> , (1999)	1985-1998	Expenditure to total assets variable has a negative impact on bank profitability. Current account deposits have a positive impact on bank profitability. The liquidity variable and loans and advances have a negative impact with ROE variable. The ROA has a positive relation with loans and advances. No relation is found between bank profitability and capital & reserves, time and savings deposits.
		Sufian (2010a)	1992-2003	Liquidity has negatively related to bank's profitability. Economic growth and inflation has positive impact on the profitability banking sector.

		Said and Tumin (2011)	2001-2007	Liquidity and bank size do not have influence on the profitability of banks. Operating expenses is significantly and negatively related to profitability of banks.
		Jasmine <i>et al.</i> , (2011)	2004-2010	Capital adequacy ratio is significant related to banks' profitability. Expenses management, loans, deposits, GDP and inflation rate are insignificant in determining the profitability determinants. Bank size does not have influence on the profitability of banks.
<b>Single country</b>	<i>Cameroon</i>	Atemnkeng and Joseph (2000)	1987-1999	The market concentration power is importance in the determination of bank profitability. Bank's size and time & savings deposits ratio are positively correlated to bank's profitability.
	<i>Hong Kong</i>	Jiang <i>et al.</i> , (2003)	1997-2002	Operational efficiency is the most important factor in explaining differences in profitability. GDP growth, inflation and real interest rates have a positive impact.
	<i>Australia</i>	Williams (2003)	1989-1993	GDP growth is positively related to bank profitability. Competitor market share is negatively related to bank profitability.

	<i>UK</i>	Kosmidou <i>et al.</i> , (2006)	1995-2002	Capital strength has a positive dominant influence on bank profitability. Efficiency in expenses management, GDP growth and inflation concentration ratio are a positive and significant impact on bank profitability. Bank size is negatively related to banks' profitability.
	<i>UK</i>	Li. Yuqi (2008)	1999-2006	Capital strength has a positive influence on bank profitability. Loan loss reserves have a negative and significant impact on profit. Inflation and GDP growth have insignificant impact on profitability.
	<i>Philippine</i>	Sufian and Chong (2008)	1990–2005	Non-interest income and capitalization have a positive impact on banks' profit. Bank size and inflation have a negative impact on banks' profit.
	<i>Tunisian</i>	Bennaceur and Goaid (2008)	1980-2000	Profitability and net interest margin tend to be associated high amount of capital, and with large overheads. Loans have a positive and significant impact on bank's interest margins. Inflation and GDP per Capita growth have no impact on bank's profitability and net interest margin. The size has negative and significant impact on the net

				interest margins. Stock market development has a positive effect on bank profitability.
	<i>Macau</i>	Vong and Chan (2008)	1993-2007	Capital strength is importance in affecting on profitability. Smaller banks, on average, achieve a higher profitability than larger ones. Inflation has an important positive role in explaining banks' profitability.
	<i>Nigeria</i>	Aburime (2008a)	2000-2004	Capital size and ownership concentration significantly determine bank profitability.
	<i>Nigeria</i>	Aburime (2008b)	1980-2006	Real interest rates and inflation have a positive and significantly impact on bank profitability. Exchange rate is negative and determines bank profitability.
	<i>Greece</i>	Athanasoglou <i>et al.</i> , (2008)	1985-2001	Capital is important in explaining bank profitability. Bank size and concentration not related to bank profitability. Inflation is positively correlated to bank profitability.
	<i>Thailand</i>	Sufian (2010b)	1999-2005	Capitalization, economic growth and inflation correlated positively to banks' profitability. Non-interest income, overhead and GDP per capita have negative relationship with bank profitability.

	<i>Jordan</i>	Al-Jarrah <i>et al</i> (2010)	2000- 2006	Loans ratio, operating expenditures ratio, capital structure, deposit ratio and non operating expenditures ratio are the most important internal determinants of the banks' profitability. Inflation is the most important external determinants of banks' profitability.
	<i>Switzerland</i>	Dietrich and Wanzenried (2010)	1999- 2008	There are large differences in profitability among the banks. Better-capitalized banks seem to be more profitable. Bank age has a significant impact on bank profitability. Young banks seem to be more profitable than older ones.
	<i>Indonesia</i>	Sufian and Habibullah (2010a)	1990- 2005	Income diversification, capitalization, economic growth and concentration ratio are positively related to bank profitability. Bank size and overhead have negative impact on bank profitability.
	<i>Indonesian</i>	Sastrouwito and Suzuki (2011)	2001- 2008	Expenses management has a negative and significant impact on profitability. Capitalization, loan and concentration have a positive and significant impact on profitability. Inflation and bank size have insignificant effect on bank profitability.

	<i>Ukraine</i>	Davydenko (2011)	2005-2009	Capital, Inflation, GDP and bank size are positively related to banks profitability. Loans, administrative expenses, deposits and foreign ownership have a significant negative impact on profitability.
	<i>Pakistan</i>	Ali <i>et al.</i> , (2011)	2006-2009	GDP growth and operating efficiency have positive and significant relation with bank profitability. Capital and inflation rate result showed a negative and significant relation with bank profitability.
	<i>Pakistan</i>	Javaid <i>et al.</i> , (2011)	2004-2008	Equity and deposits have a positive and significant impact on bank profitability. Bank size has a negative and significant impact on profitability. Loans have not significant impact with bank profitability.
	<i>Jordan</i>	Ramadan <i>et al</i> (2011)	2001-2010	Capital adequacy and loans have positive and significant impact on bank profitability. Cost management and concentration negative and significant impact on bank profitability. Bank size, inflation and GDP results showed insignificant impact on bank profitability.
	<i>Turkey</i>	Alper and Anbar (2011)	2002-2010	Asset size and non-interest income have a positive and

			significant effect on bank profitability. Credit portfolio and loans have a negative impact on bank profitability.
	<i>Tunisian</i>	Ayadi and Boujelbene (2012)	1995-2005 Capitalization and bank size have a positive and significant effect on the bank profitability. Concentration ratio, GDP growth and inflation rate do not have significant effect on bank profitability.
	<b>Panel countries</b>	Demirgüç-Kunt and Huizinga (1999)	1988-1995 Equity, inflation rate and concentration ratio have a positive impact on bank profit. GDP per capita has a negative impact on bank profit.
		Athanasoglou <i>et al.</i> , (2006)	1998-2002 Capital, inflation, concentration and bank size positively and significantly affects bank profitability. Operating expenses variable have a negative and significant effect on bank profitability. GDP per capita does not have significant effect on bank profitability.
		Flamini <i>et al.</i> , (2009)	1998-2006 Equity, inflation and GDP growth have a positive and significant impact on bank profitability. Overhead costs, market concentration and GDP per capita have insignificant effect on bank profitability.

The impact of financial crises on banks performance	<i>Indonesia</i>	Sufian and Habibullah (2010a)	1990–2005	Asian financial crisis exerts negative and significant impact on the profitability of banks.
	<i>Thailand</i>	Sufian and Habibullah (2010b)	1999–2008	Global financial crisis 2008 exerts a negative impact on the efficiency of Thai banks.
	<i>Panel countries</i>	Ahmad and Noor (2011)	1992–2009	1998 Asian financial crisis and 2008 global financial crisis have a negative and insignificant impact on banks profitability.
	<i>Panel countries</i>	Rashwan (2012)	2007–2008–2009	The 2008 global financial crisis impacted on the performance of both banking sectors Traditional and Islamic.
Difference in profitability and efficiency between domestic and foreign banks	<i>Lebanon</i>	Awdeh (2005)	1993 - 2003	Foreign banks are more profitable than domestic banks. The determinants of domestic banks and foreign banks' profitability are different. Domestic banks are more affected by inflation and GDP than foreign banks.
	<i>Malaysia</i>	Mokhtar <i>et al.</i> , (2006)	1997–2003	Full-fledged Islamic banks are more efficient than Islamic windows. Islamic windows of foreign banks are more efficient than domestic banks. The efficiency level of Islamic banking is lower that of conventional banks.
	<i>Malaysia</i>	Sufian (2006)	2001–2004	Domestic Islamic banks have higher technical efficiency

				compared to foreign banks. Foreign Islamic banks have relatively more efficient in controlling their operating costs.
	<i>Panel countries</i>	Fotios and Kyriaki (2007)	1995–2001	Equity is positively related to foreign and domestic banks profitability. But, the relation between size and both banks' profitability is negative. Liquidity and short term funding is significant and positively related to the profitability of domestic banks. The impact of GDP growth and inflation on profitability is positively related to domestic banks and negatively related to foreign banks. Concentration has a positive impact on foreign banks profits, whereas, the impact on domestic banks profits is not significant.
	<i>Malaysia</i>	Elyor (2009)	2004–2008	Foreign banks have strong capital, but the statistics show that domestic banks more profitable.
	<i>Malaysia</i>	Tahir <i>et al.</i> , (2010)	2000 - 2006	Operating cost is slightly higher for domestic banks than for foreign banks. Profit ratios are slightly higher for foreign banks relative to domestic banks. Domestic banks are more cost-efficient but less profit - efficient relative to foreign banks.

	<i>Thailand</i>	Sufian and Habibullah (2010b)	1999-2008	Domestic banks have relatively more efficient than foreign banks peers.
	<i>Pakistan</i>	Azam <i>et al.</i> , (2012)	2004-2010	Foreign banks are more profitable than domestic banks. Domestic and foreign banks have different profitability determinants, that the factors are important in shaping domestic banks' profitability are not necessary important for the foreign banks and vice versa.
Determinants of banks efficiency	<b>Single country</b> <i>Malaysia</i>	Zamil (2007)	2000-2004	Bank size and non-performing loans are significantly positive associated to bank efficiency. Capitalization and market power are negatively significant associated to bank efficiency.
	<i>Malaysia</i>	Sufian (2007b)	1995-1999	Loans intensity and bank size are positively related to bank efficiency. Bank's market share and GDP are negatively related to bank efficiency.
	<i>Malaysia</i>	Ismail <i>et al.</i> , (2012)	2006-2009	Capitalization and bank size are positively associated to efficiency. Loan quality and bank expenses are negatively associated to efficiency
	<i>Malaysia</i>	Sufian <i>et al.</i> , (2012)	2006-2010	Capitalization, market power, liquidity, GDP and bank size have a positive relationships with Malaysian Islamic banks'

				efficiency. The inflation exerts negative influence on Islamic banks' efficiency.
<b>Single country</b>	Seelanatha (2007)	1989-2004		Banks efficiency has positive relationships with capital strength, profitability, loans, liquidity and stock market capitalization. Old banks have a negative relationship with banks efficiency.
<i>Sri Lanka</i>				
<i>Thailand</i>	Sufian and Habibullah (2010b)	1999-2008		Capital strength and loans is positively related to the efficiency of banks. Credit risk and bank size are negatively related to banks efficiency. Inflation, GDP and concentration have insignificant impact on bank efficiency.
<i>Mexico</i>	Garza-Garcia (2012)	2001-2009		Capital, loans, GDP growth and foreign ownership positively related to the efficiency of banks. Overhead and inflation rate are negatively related to banks efficiency. Profitability, bank size and concentration have insignificant impact on bank efficiency.
<i>Pakistan</i>	Shah <i>et al.</i> , (2012)	2001-2008		Markup expenses, liability, profit and ownership have significant impact on technical efficiency. Bank size is insignificant in relationship with efficiency.

	<b>Panel countries</b>	Casu and Molyneux (2003)	1993-1997	Capital ratio and return on equity explain variations in bank efficiency.
		Grigorian and Manole (2006)	1995-1998	Equity capital ratios, market concentration, foreign ownership, capital adequacy and GDP per capita are positively related to bank efficiency. Bank age and inflation are insignificant related to bank efficiency.
		Noor and Ahmad (2012)	1997-2009	GDP, bank size, capitalization, operating expense and profitability have positive relationship with bank efficiency. Loans have negative relationship with bank efficiency. Deposits, inflation and global financial crisis have insignificant negative relationship with bank efficiency.

The reviewing of previous studies related to bank profitability provides the justification to this study to be conducted. Moreover, to determine whether there is a gap between the previous studies is needed to be bridged. 1) This study seeks to provide new support for the impact of the 2008 global financial crises on the profitability of Islamic banks. 2) To the best of my knowledge, this first study attempts to find out the differences in profitability determinants between domestic and foreign Malaysian Islamic banks. 3) In contrast to the previous studies which are conducted to find out the determinants of profitability and to identify determinants of efficiency, this study, however, is an attempt to identify the differences between

profitability determinants and efficiency determinants of Islamic banks in Malaysia. Therefore, this study has sought to examine whether banks' efficiency in the Islamic banking industry in Malaysia is determined by a set of profitability variables.

