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THE PERFORMANCE OF MALAYSIAN ISLAMIC BANKING INDUSTRY AND THE IMPACT OF FOREIGN ISLAMIC BANKS

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Thesis Submitted in Fulfilment of the Requirements for the Award of the Degree of Doctor of Philosophy in Islamic Finance

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To my lovely wife, Yazmin

and my daughters, Eryna Batrisyia and Hannah Zafirah

THE PERFORMANCE OF MALAYSIAN ISLAMIC BANKING INDUSTRY AND THE IMPACT OF FOREIGN ISLAMIC BANKS

BY

MOHD FAIZAL BASRI

ABSTRACT

Malaysia's determination to become a hub for Islamic banking in Southeast Asia has led the Central Bank of Malaysia to grant licenses to foreign Islamic banks to operate in the country. Due to the intense competition among Islamic banks, the introduction of more innovative products is projected to tap investment opportunities not only for Malaysia but also for the rapidly growing Southeast Asian region.

This research assesses the performance of Malaysian Islamic banking industry since the introduction of the first Islamic bank two decades ago, and evaluates the competition among the Islamic banks in the country.

The research evaluates the impact of foreign Islamic banks in Malaysia by measuring their contribution to the growth of the Malaysian Islamic banking industry. In relation to this, the study is designed to address three primary areas. First, to measure the performance of the Islamic banks in Malaysia by using financial ratios, data envelopment analysis (DEA), and the Malmquist Productivity Index. Second, to compare and evaluate the nature of competition and market structure of the Islamic banks in the country by employing the bank concentration ratio (CR_k), Herfindahl-Hirschman Index (HHI), and the Panzar-Rosse (PR) model. Lastly, to validate the relationship between competition among Islamic banks in Malaysia and their financial performance.

The selected financial ratios indicated that domestic Islamic banks performed better during the 2005 to 2012 period in terms of profitability, but the foreign Islamic banks excelled in terms of liquidity, risk, and solvency ratios. DEA results showed that the domestic Islamic banks are considered more efficient with the majority of domestic Islamic banks outperforming the foreign Islamic banks. Banks like Maybank Islamic, CIMB Islamic, and Alliance Islamic are considered among the top performers for technical efficiency and scale efficiency. The study also found that based on the Malmquist Productivity Index, the least efficient banks based on DEA have improved in technical efficiency, technology, and total factor productivity (TFP). The study also found that between 2008 and 2012, the Malaysian Islamic banking industry operated in monopolistic competition conditions with a moderately concentrated market structure. The introduction of foreign Islamic banks caused the market structure to become more competitive and less concentrated by comparing the results that include foreign Islamic banks against results generated with a subsample of domestic Islamic banks only. BNM's financial reform and liberalisation of financial system proved to induce competition making the financial system more resilient, competitive, and dynamic. The Islamic banks have recorded consistent increased annual performance with the under-performing Islamic banks catching up to the top performers.

DECLARATION

I hereby declare that the materials contained in this thesis have not been previously submitted for a degree at this or any other university. I further declare that this thesis is solely based on my own research.

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ACSI	American Customer Satisfaction Index
AIBIM	Association of Islamic Banking Institutions Malaysia
BAFIA	Banking and Financial Institution Act 1989
BBA	*Bay' Bithaman Ajil*
BIMB	Bank Islam Malaysia Berhad
BLR	Base Lending Rate
BMMB	Bank Muamalat Malaysia Berhad
BNM	Bank Negara Malaysia / Central Bank of Malaysia
BR	Base Rate
CAR	Current Asset Ratio
CART	Classification and regression tree (CART)
CDR	Cash Deposit Ratio
CR	Current Ratio
CR_k	Concentration Ratio
CRS	Constant Returns to Scales
D/E	Debt-to-Equity Ratio
DEA	Data Envelopment Analysis
DFA	Distribution-Free Approach
DMU	Decision-making Unit
DTAR	Debt-to-Asset Ratio
EM	Equity Multiplier
ES	Efficient structure
ETA	Ratio of Equity to Total Assets
FDH	Free Disposal Hull
FSA	Financial Services Act 2013
FSMP	Financial Sector Masterplan
FTA	Ratio of Total Financings to Total Assets
GBD	Government Bond Investment
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
HHI	Herfindahl-Hirschman Index
HKMI	Hong Kong Monetary Investment Authority
IAIB	International Association of Islamic Banks
IBA	Islamic Banking Act 1983
IBF	Interest-free Banking Fund
IBS	Islamic Banking Scheme
IBU	Islamic Banking Unit
ICT	Information and Communications Technology
IDB	Islamic Development Bank
IFSA	Islamic Financial Services Act 2013
IFSB	Islamic Financial Services Board

IILM	International Islamic Liquidity Management Corporation
INCEIF	International Centre for Education in Islamic Finance
ISRA	International Shari'ah Research Academy
KFH	Kuwait Finance House
LDR	Loan Deposit Ratio
LIR	Liquidity Ratio
LTA	Long-term Loan Ratio
MAKIN	Majma' Kewangan Islam Nusantara
MENA	Middle East and North Africa region
MIFC	Malaysia International Islamic Financial Centre
NIM	Net Interest Margin
NIO	New industrial organisation
OIC	Organisation of Islamic Cooperation
OPR	Operating Profit Ratio
PER	Profit Expense Ratio
PF	Ratio of Income Attributable to Depositors to Total Deposits
PK	Ratio of Other Operating Expenses to Total Assets
PL	Ratio of Personnel Expenses to Total Assets
PLS	Profit and Loss Sharing
PSP	Profit Sharing Principle
PR	Panzar-Rosse
PTE	Pure Technical Efficiency
PWSBH	Perbadanan Wang Simpanan Bakal-Bakal Haji
RM	Ringgit Malaysia
ROA	Return on Assets
ROE	Return on Equity
RSB	Religious Supervisory Board
SAC	*Shari'ah* Advisory Council
SCP	Structure-Conduct-Performance
SFA	Stochastic Frontier Approach
SPI	Skim Perbankan Islam
SSA	Sub-Saharan Africa
TFA	Thick Frontier Approach
TFP	Total Factor Productivity
TREV	Ratio of Total Revenue to Total Assets
UAE	United Arab Emirates
UKTI	United Kingdom Trade and Investment
VIF	Variance Inflation Factor
VRS	Variable Returns to Scale

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Chapter 1

INTRODUCTION

1.1 GENERAL INTRODUCTION

Islamic banking represents a banking system or banking activity that is aligned and in compliance with *Shari'ah* (Islamic law) principles, the essence of which can be located within the value proposition of Islamic economics. According to Ebrahim and Tan (2001), one of the ultimate goals of the Islamic banking system is to put into practice the value system of al-Quran and the *Sunnah* (tradition of Prophet Muhammad) in the society. Accordingly, in business transactions, all activities are permissible as long as they comply with four rules. The first rule is to ensure that there is no interest or *riba* in any transaction. Next, to avoid any economic activities that involve high speculation (*gharar*) and gambling (*maysir*). The third rule is the introduction of compulsory almsgiving or *zakat*. Lastly, to discourage the production of goods and services contrary to the Islamic conception of human well-being as expressed by its value system and are considered *haram* or unlawful. It should be noted in compliance with these general principles relating to 'form', Islamic financial contracts, instruments, and activities are also shaped by Islamic moral principles which provides the substantive morality it requires to be complete.

Islamic financial activity aims at generating wealth for the Muslim community by setting up Islamic financial markets, institutions, and products, as Islam does not see any problem with wealth generation as long as it complies in form and substance with the requirements of Islam. These arrangements are expected to complement the needs of the Muslim society, especially in business and banking. It is important to note that as part of such normative and positive requirements, Islamic finance is also considered equity based financing by essentialising real economic activity, which is marked by profit and loss sharing principles (Asutay, 2010). This system is to reduce the financial

impact on the extreme economic output that may reduce the risk of bankruptcies, and aims to contribute to economic growth and development.

General Islamic financing instruments widely practiced in Islamic banking are profit sharing (*mudarabah* and *musharakah*), safekeeping (*wadiah*), joint venture (*musharakah*), deferred payment sale *(bay' bithaman ajil)*, cost plus (*murabahah*), leasing (*ijarah*), sell and buy back (*bay' al-'inah*), guarantee (*kafalah*), and remittance (*hiwalah*). In addition to these traditional products and instruments, Islamic financial engineering aims to develop new products to respond to the sophisticated financial needs in the markets.

In terms of the development trajectory of Islamic finance, the 1970s saw the establishment of a number of Islamic banks worldwide. Among the notable establishment were the Nasser Social Bank in 1971 (Egypt), Philippine Amanah Bank in 1973, and Dubai Islamic Bank in 1975. Meanwhile, the Kuwait Finance House, Faisal Islamic Bank of Sudan, and Faisal Islamic Bank of Egypt, were established in 1977, followed by the Bahrain Islamic Bank in 1979, and the Qatar Islamic Bank in 1981 (Zaman and Movassaghi, 2001).

The initial form of Islamic finance and banking in Malaysia can be traced back to as early as September 1963 when Perbadanan Wang Simpanan Bakal-Bakal Haji (PWSBH) was set up, which aimed at providing a *halal* investment forum for local Muslims to invest their savings for their Hajj (pilgrimage to Makkah) expenses. PWSBH was later merged with Pejabat Urusan Haji to form Lembaga Urusan dan Tabung Haji (now known as Lembaga Tabung Haji) in 1969 (see: Central Bank of Malaysia Official Portal). After this initial institutionalisation, the first Islamic commercial bank, Bank Islam Malaysia Berhad (BIMB), begun its operations on 1 July 1983. As a corner stone development, in 1993, commercial banks, merchant banks, and finance companies were also permitted to offer Islamic banking products and services under the Islamic Banking Scheme (IBS). Nevertheless, for those conventional institutions with Islamic windows, it is obligatory to separate the funds derived from Islamic banking transactions from the funds obtained from the conventional banking business.

This requirement aims to ensure against any intermingling of funds to keep the Islamic compliancy at its maximum (see: Central Bank of Malaysia Official Portal).

In recent years, Malaysia has invested effort into developing its Islamic finance sector with its banks, financial institutions, Islamic capital markets, Islamic financial and liquidity market, Islamic finance related standards settings, and Islamic finance related educational and training institutions, resulting in its share of total financing in the country to increase to 25%. With such developments, the political economy of Malaysia remains a dual banking and financial system having Islamic and conventional sectors operating concurrently. Within the regulative arrangements, the Islamic banks primarily offer Islamic banking products only, while conventional banks are permitted to offer Islamic banking products alongside conventional products through their Islamic windows (Sufian, 2006).

Malaysian Islamic banking is becoming increasingly accepted compared to twenty years ago. Based on the *Financial Stability and Payment Systems Report 2006* by Bank Negara Malaysia (2007), Islamic financial products are more in demand compared to conventional financial instruments. The report also suggested that the annual growth of Islamic banking as a whole in terms of assets, financing, deposits, and profit have performed better than conventional banks. By referring to the latest *Financial Stability and Payment Systems Report 2014* of Bank Negara Malaysia (2015), the Malaysian Islamic banking industry remains robust despite volatility and pessimistic global growth outlook. As of 2014, there were twenty Islamic banks with ten domestic Islamic banks and ten foreign Islamic banks operating in Malaysia. The Malaysian Islamic financial industry provides more options to the public and contributes to their awareness (see: Malaysia International Islamic Financial Centre (MIFC) Official Website).

Malaysia's determination to become a hub for Islamic banking in Southeast Asia motivated the Bank Negara Malaysia (BNM), being the Central Bank of Malaysia, to grant licenses to foreign Islamic banks to operate in the country. To this end, BNM has awarded licenses to top global Islamic banks including the Kuwait Finance House, Al-Rajhi Bank, and Asian Finance Bank to spur greater competition through their operations in the country. The Kuwait Finance House was granted the license on May

2004, five months ahead of the other two foreign Islamic banks. This move aimed at to add more players in the market to develop Islamic financial product offerings and services with a large pool of highly skilled Islamic finance expertise (Malaysian Islamic Finance Monthly, 2006), the consequences of which are tested in this research. Due to the intense competition among Islamic banks, it is projected that more innovative products will be introduced into the market to tap investment opportunities. This improvement is not only concerned with Malaysian markets, but also with the rapidly growing Southeast Asian region.

It is important to note that in order to remain competitive in the market, Islamic banks should consider several competition issues. Heffernan (2005) believes that productivity, efficiency, economies of scale and scope, tests of competition in the banking market, and mergers and acquisitions are the issues to be taken into account for any bank to best face competition challenges. Bank productivity and efficiency is considered an essential benchmark to assess how Islamic banks perform in the face of competition.

Production and intermediation are two approaches to measure bank productivity. The production approach estimates the number of accounts or transactions as the output and capital and labour as the input which means that it measures the productivity of the capital and labour (total cost) to produce deposits and loans accounts. As for the intermediation approach, it considers the value of loans and investments as output and the total costs consisting of capital, labour, and interest costs. In most empirical studies, efficiency is measured by the computation of Data Envelopment Analysis (DEA) which can be used as one of the methods to test X-efficiencies (Heffernan, 2005). These issues are discussed in detail in Chapter 3, while it should be noted that measuring efficiency of Islamic banking in Malaysia is the subject matter of this study.

1.2   RESEARCH STATEMENT

This study explores the importance of the Islamic banking industry in Malaysia. Since the establishment of the first Islamic bank in Malaysia in 1983, the Malaysian public has shown an encouraging response to Islamic financial instruments.

The research focuses on the impact made by foreign Islamic banks in Malaysia, namely Kuwait Finance House, Al Rajhi Bank, and Asian Finance Bank towards the Malaysian Islamic banking industry. In 2005, BNM has awarded licenses to these international Islamic banks to operate in Malaysia to encourage the competitiveness of the Islamic banking players. In addition, this study takes into consideration the existing foreign banks in the country who operate via Islamic banking subsidiaries.

More licenses were awarded by BNM in 2008 to Alkhair International Islamic Bank (formerly known as Unicorn International Islamic Bank), PT. Bank Muamalat Indonesia, Deutsche Bank AG International Islamic Bank alongside with Bank of Tokyo-Mitsubishi UFJ Malaysia and CITI Malaysia (via windows), which allow the banks to offer Islamic commercial and investment banking services denominated in foreign currencies (Malaysia International Islamic Financial Centre (MIFC) Official Website). In 2010, BNM further awarded five new licenses to foreign banks that is BNP Paribas SA, PT Bank Mandiri, National Bank of Abu Dhabi, Mizuho Bank, and the Sumitomo-Mitsui Banking Corporation (Samat, 2010). However, the ten latest international Islamic banks in the country mentioned above will not be included in the research because this research focuses on Islamic banks with transactions denominated in the local currency, *i.e.* RM only.

This latest development may enhance Malaysia's position as a centre of Islamic banking in Southeast Asia. With the increasing number of players in the market, especially with the presence of foreign Islamic banks, it is forecasted that the Malaysian Islamic banking industry may grow to catch up with conventional banking. However, further study needs to be conducted to support the statement thereby highlighting the relevance of this research to the industry.

Competition causes Islamic banks to react differently to the market based on each banks' strengths and priorities. A bank's strategies and campaigns may cause the other banks to respond by matching it or they might not responding at all. This highlights the importance of marketing strategies to ensure competitive advantage.

Competition among Islamic banks may also result in the emergence of new or improved products and services for Malaysians. As a multi-racial nation, it is important for the Islamic banks to satisfy the banking needs of both the Muslim and non-Muslim communities. It is also important to send the message to the public that Islamic banks are not only meant for Muslims, and hence effective promotion campaigns may improve the competitiveness of Islamic banks to the established conventional banks.

1.3 AIMS, OBJECTIVES, AND RESEARCH QUESTIONS

The aim of this research is to assess the significance of the performance of the Malaysian Islamic banking after three decades since the introduction of the first Islamic bank in 1983 and to evaluate the nature and consequences of competition among the Islamic banks. The research also aims to assess the impact of foreign Islamic banks in Malaysia with the objective of assessing their contribution to the growth of the Malaysian Islamic banking industry.

The research focuses on the following objectives:

(i) To measure the performance of the Islamic banks in Malaysia by using financial ratios, Data Envelopment Analysis (DEA), and the Malmquist Productivity Index;

(ii) To compare and evaluate the competition and market structure of the Islamic banks in the country by employing bank concentration ratio (CR_k), Herfindahl-Hirschman Index (HHI), and the Panzar-Rosse (PR) model;

(iii) To validate the relationship between competition among Islamic banks in Malaysia and their financial performance.

In achieving the research aims and objectives, the following research questions were developed.

The research questions of this study and their relevance to the overall aims and objectives of this study are provided as follows:

(i) How do the Islamic banks in Malaysia compete against each other?

This research question will identify the market trend, market shares, and the Islamic banks' performances. Among the key indicators that will be measured are productivity, efficiency, profitability, assets utilisation, and other financial ratios.

(ii) How did the Islamic banking industry perform before and after the entrance of foreign Islamic banks in Malaysia?

This aims to determine the contribution of the foreign Islamic banks to the Malaysian Islamic banking industry whilst identifying other potential factors that contribute to the growth or contraction of the industry.

(iii) What is the nature of competition surrounding the Malaysian Islamic banking industry?

The nature of competition for Islamic banks in Malaysia changes from time to time. BNM introduced *Skim Perbankan Islam* (SPI) in 1993, which allows conventional banks to offer Islamic banking products to complement BIMB. In 1999, the second full-fledged Islamic bank, Bank Muamalat Malaysia Berhad (BMBB) commenced operations. Later, more full-fledged Islamic banks joined the market, notably subsidiaries of conventional banks and foreign Islamic banks. Such developments have provided the public with more options to encourage competition among all the players.

(iv) How does competition among Islamic banks correlate with their financial performance?

The analysis in relation to this research question aims to investigate the consequences of having more participants in the market, especially foreign Islamic banks in Malaysia on respective banks' financial performance.

As for the scope of this research, the research focuses on the conditions of Malaysian Islamic banking and the implications of the entrance of foreign Islamic banks. The researcher will analyse the performance of Islamic banking as a whole prior and after the entrance of foreign Islamic banks. BNM reports and each bank's annual reports will be reviewed for an overview of the situation.

The research will pinpoint the trend of Islamic banks' performance. The researcher will analyse 16 Islamic banks (excluding the international Islamic banks that can offer products and services in foreign currency) in terms of profitability, liquidity, risk and solvency, and commitment to domestic affairs and the Muslim community. The process of gathering all information refers to the annual and other financial reports for every Islamic bank.

The research also attempts to identify the competition issues and the nature of the competition among all Islamic banks in the country. The Bank Concentration Ratio (CR_k), Herfindahl-Hirschman Index, and Panzar-Rosse model will determine the structure of the Malaysian Islamic banking industry. Furthermore, the researcher analyses the banks' financial performance for the same period for further conclusions.

1.4   SIGNIFICANCE OF THE RESEARCH

The researcher intends to evaluate the decision by the Malaysian government to liberalise its banking industry, specifically its impact on Islamic banks. BNM as the bank for the Malaysian government has granted multiple licenses to foreign Islamic banks throughout the nineties with the intention to stimulate competition for the local and international Islamic banks existing in the country. The main areas the researcher would like to assess after the move are the performances of the related Islamic banks and to distinguish the significance of the foreign Islamic banks towards the market structure of the Islamic banking industry in Malaysia.

This research expects to benefit various stakeholders in the Islamic banking sector, as the results of the research are expected to shed light on our understanding of the future of the Islamic banking industry and its challenges. It also hopes to identify the impact of the foreign Islamic banks' entry into the Malaysian market.

The research is also expected to assist the key players toward forming a better understanding of the demand conditions and provide valuable knowledge to face the competition among Islamic banking institutions. Competition issues and its relationship with financial performance provides pointers to the Islamic banks in the country to be aware of the scenarios surrounding the Malaysian Islamic banking industry.

From an academic point of view, this research is expected to contribute toward enhancing the knowledge and information in the Islamic banking field. The output of the research hopes to provide new knowledge to the field and to be used as a reference for future studies.

1.5 RESEARCH METHODOLOGY

This section briefly explains the research methodology used to conduct this research on the performance of Malaysian Islamic banking and the impact of foreign Islamic banks on the development of the industry.

For this research, the quantitative methodology is adopted as it involves the collection of secondary data related to the financial performance of the Islamic banks. As for the research method, quantitative methods are used in the research through explanatory and descriptive studies. This method aims to define the problem more precisely, identify a relevant course of action, and gain additional insight before any measures and recommendations can be developed.

As regards to population and sampling, this research includes 16 local and foreign Islamic banks in Malaysia. The selection provides an overall view of the industry and will ensure more accurate judgment. The researcher obtained the list of the related Islamic banks from BNM and MIFC.

As for data, the researcher utilised secondary data from sources such as newspapers, annual reports, magazines, journals, websites, and other relevant sources. Data providers like Bankscope and IBIS online were useful for obtaining the required financial data. It should be noted that secondary data sources are crucial for the researcher to determine the significance of the Malaysian Islamic banking market and analyse financial performance among Malaysian Islamic banks.

The collected secondary data were used to calculate the banks' performance indicators. The comparison between all Islamic banks are conducted using Sabi (1996) bank performance indicators as a guideline. According to Samad and Hassan (1999) who used Sabi's method, the performance of banks is best measured by comparing between banks. Financial ratios for bank performance are grouped into four categories: profitability ratios, liquidity ratios, risk and solvency ratios, and commitment to the economy and Muslim community.

The same dataset is also used to analyse the efficiency of the Islamic banks with Data Envelopment Analysis (DEA) and Malmquist Productivity Index. The Panzar-Rosse

(PR) model is also employed to develop the performance indicator that will establish a measurable assessment of the competitive nature of the market together with Herfindahl-Hirschman Index (HHI) and the Bank Concentration Ratio (CR_k)

Details of the research methodology are presented in Chapter 6.

1.6   OVERVIEW OF THE RESEARCH

This thesis consists of nine chapters including three key empirical chapters. The first empirical chapter focuses on descriptive analyses while the other two evaluate the efficiency of the Islamic banks in the country from 2008 to 2012. They also examine the market structure of the Islamic banking industry during the same period. The overview of the research is as follows:

The introduction chapter focuses on the background of the research, the research statement, the aim and objectives of the research, research questions related to the aims and objectives, the rationale and significance of the research, and briefly describes the adopted research methodology.

Chapter 2 discusses the history of Islamic banking and finance and its financial instruments and product development.

Chapter 3 explores methods of bank performance analyses and competition in the banking sector. It features relevant methods and techniques including a survey of empirical studies.

Chapter 4 concentrates on developments and trends in Islamic banking and finance in Malaysia, competition issues, and the outlook of the industry in Malaysia.

Chapter 5 explains the methodology and modelling of the research including the data collection and data analysis procedures, whilst also detaining the research limitations and difficulties.

Chapter 6 features the descriptive results of 16 selected Islamic banks in Malaysia based on selected ratios that examine profitability, liquidity, risk and solvency, and

commitment to the economy and Muslim community. The results are then compared between the domestic and foreign Islamic banks.

Chapter 7 highlights the efficiency of the Islamic banks by applying the Data Envelopment Analysis (DEA) and Malmquist Productivity Index approaches. The results are then evaluated between the domestic and foreign Islamic banks in the country. This is an important chapter since it evaluates the efficiency of the Islamic banks and contrasts with the descriptive analysis from the previous chapter.

Chapter 8 analyses competition using several competition models including k-Bank Concentration Ratio (CR_k), Herfindahl-Hirschman Index (HHI), and the Panzar-Rosse (PR) approach. The results indicate the market structure of the Islamic banking industry in Malaysia after liberalisation. The results can be compared with previous literature, which illustrates the market structure prior to liberalisation. This explains whether the industry has become more competitive by the entrance of new foreign Islamic banks or the opposite.

Chapter 9 concludes the research by reflecting on its major findings. It then offers recommendations for future research whilst bringing the thesis to a close with some concluding remarks.

Chapter 2

AN INTRODUCTION TO ISLAMIC FINANCE AND GLOBAL DEVELOPMENT IN THE ISLAMIC FINANCIAL SECTOR: A LITERATURE REVIEW

2.1   A GENERAL INTRODUCTION TO ISLAMIC BANKING AND FINANCE

The concept of Islamic banking and finance can be traced back to the 1950s with the development of research relating to theoretical frameworks of Islamic economics and finance. Post-war Islamic revivalism and independence of Muslim-majority nations encouraged Muslims to develop *Shari'ah* based banking and finance (Khan, 2007a).

The early experiments can be found in the 1960s with Mit Ghamr Savings Association, as the first Islamic financial institution established in Egypt. Together with the expertise of Ahmad El-Nagar and financial support from King Faisal of Saudi Arabia, Mit Ghamr Savings Association was established in 1963 as a social or credit banking for micro enterprises. The establishment of Mit Ghamr Savings Association can be considered the starting point in the development of Islamic banks based on profit and loss sharing concept. However, Mit Ghamr Savings Associations ceased its operations in 1967 due to political reasons as the political economy of the country was not happy with empowering the civil society. Another form of Islamic banking and finance that can be found during that period was Perbadanan Wang Simpanan Bakal-Bakal Haji (PWSBH) or later known as Lembaga Tabung Haji in Malaysia, which was set up to invest the savings of Malaysian Muslims in an Islamic compliant manner to finance their expenses for their pilgrimage to Makkah using interest-free instruments (Ayub, 2002; Wilson, 2005).

Islamic banking started to flourish in the 1970s with Nasser Social Bank established in Egypt in 1971 as a continuation of the experiment of the Mit Ghamr Savings Association. However, the establishment of the first modern commercial Islamic bank

was with the establishment of the Dubai Islamic Bank in 1975 through private initiatives (Wilson, 2005; Zaman and Movassaghi, 2001).

The significant progress in the history of Islamic banking was the establishment of the Islamic Development Bank (IDB) in 1974, which was set up to act as an international financial institution after the Declaration of Intent issued by a Conference of Finance Ministers of Muslim Countries. The event was held in Jeddah in December 1973 (Iqbal and Molyneux, 2005). Three years later, in 1976, the First International Conference on Islamic Economics took place in Makkah, which was a platform for the Muslim economists and *Shari'ah* scholars to discuss the shape and the future of Islamic economics as a theoretical concept as well as the future of Islamic banks (Haneef, 1995).

More Islamic banks were founded in the 1970s especially in the Gulf as well as in Iran, Pakistan and other parts of the world. Among these banks were the Kuwait Finance House established in 1977 and Bahrain Islamic Bank in 1979 (Wilson, 2005; Zaman and Movassaghi, 2001).

Islamic banks started to grow in the 1980s with the formation of the Gulf Cooperation Council (GCC) in 1981 comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates. The GCC removed all barriers to cross-border investment and services trade among members which is one of the fastest growing economies in the world mostly due to oil and natural gas revenues (Khan, 2007a). The decision was an ideal position for Islamic banks to capitalise on the volume of financing operations in the region by applying profit and loss sharing principles and mechanisms of Islamic banking. Other Islamic financial institutions (IFIs) also started to grow around the Muslim world. Notably with the establishment of Dar Al-Maal Islami and Qatar Islamic Bank in 1981, Al-Barakah Group in 1982, Bank Islam Malaysia Berhad and Islamic Bank of Bangladesh in 1983, and Al-Rajhi Banking and Investment Corporation in 1988, large capital bases moved into Islamic banking and financing (Khan, 2007a; Wilson, 2005).

During the 1975 to 1990 period, Islamic banking showed its maturity by operating as a feasible alternative model of financial intermediation as it has proven its reliability from

theoretical points of view and practical experience. During this period, numerous *Shari'ah* compatible products were developed, and Islamic banks that offered these products showed promising outcomes (Iqbal and Molyneux, 2005).

As of 1997, there were 176 IFIs that reported financial data to the International Association of Islamic Banks (IAIB) operating around the globe. South Asia and South East Asia have the highest number of 82 IFIS, which is approximately 47%. Africa that has 35 IFIs (20%), GCC has 21 IFIs (12%), and the rest of the world shares the remaining 38 IFIs (21%). In terms of assets, the GCC and Middle East have the largest portion of 70% with USD104 billion from the total of USD150 billion (Al-Jarhi and Iqbal, 2001; Lewis and Algaoud, 2001). Moreover, according to Boudjellal (2006), the figures increased to 261 IFIs by 2005 with assets amounting to USD250 billion and growing at 10% annually. Recent figures show a further rise with about 600 IFIs offering *Shari'ah* compatible products and services across 75 countries (Frasier-Nelson, 2014). According to the *World Islamic Banking Competitiveness Report 2013-2014* by Ernst & Young (2013), total Islamic banking assets globally was worth just below USD1 trillion in 2009 and soared to USD1.54 trillion and 1.7 trillion in 2012 and 2013 respectively. The report also suggested that the QISMUT regions consisting of Qatar, Indonesia, Saudi Arabia, Malaysia, United Arab Emirates (UAE), Turkey, and Bahrain, commanded almost 80% of the total Islamic banking assets in the world with an annual growth of 16% between 2006 to 2013.

From Malaysia, by the end of December 2009, the Islamic banking industry had captured a market share of 19.6% in total assets, total financing was 21.4%, and total deposits were 20.7% of the entire banking industry in the country. There are 36 IFIs offering Islamic banking services, including 17 full-fledged Islamic banks (Dusuki, 2012). Based on the *Malaysia Islamic Finance Report 2015* by Thomson Reuters and Islamic Research and Training Institute (IRTI) (2015), the Islamic banking assets increased from RM303 billion (USD93 billion) in 2009 to RM557 billion (USD171 billion) in 2013. The number of IFIs also increased to 76 for the same year. In terms of the breakdown, as of 2013 (Frasier-Nelson, 2014) the total Islamic banking assets accounted for 25%, total financing was 27.5%, and total deposits were 26.6% for the entire banking industry in Malaysia. The report clearly shows the improvement of the

shares held by the Islamic banking industry against the figures reported by Dusuki (2012).

2.2 ASPECTS OF ISLAMIC BANKING AND FINANCE

The fundamental business model offered by Islamic banking and finance is profit and loss sharing (PLS), which merely refers to reasonable sharing of profit and loss among the contracted parties in any financial contract. The PLS will be discussed further in section 2.3 including other types of contracts in Islamic banking.

Apart from that, the elements of *Shari'ah* with which Islamic banking and finance need to comply are the prohibition of *riba* (usury or interest) in financial transactions, avoidance of economic activities involving *gharar* (speculation) and *maysir* (gambling). Furthermore, Islamic banking and finance should make arrangements to facilitate almsgiving (*zakat*) whilst also prohibiting the production of goods and services that contradict the value patterns of Islam (*haram*) such as alcohol or pork-based products should be avoided (Ebrahim and Tan, 2001). These are discussed as follows:

2.2.1 Prohibition of *Riba*

According to Iqbal (2007), the literal meaning of *riba* in Arabic as a noun is 'increase' and as a root, it means 'the process of increasing'. As a general definition, *riba* means 'any excess or premium that need to be paid by a borrower to the lender along with the principal amount'.

The Qur'an gradually prohibits *riba* through four stages in four different verses. Ismail (2010) elaborated that the first ever verse with regards to the prohibition of *riba* was revealed in Surah Ar-Rum, verse 39: "And whatever Riba you give so that it may increase in the wealth of the people, it does not increase with Allah." The second stage of *riba* prohibition is in Surah An-Nisa, verse 161: "And because of their charging riba, whilst they were prohibited from it, and their consuming of the people's wealth unjustly, We have prepared for the disbelievers among them a painful punishment." The third stage that shows the first explicit prohibition of *riba* was Surah Al-Imran, verse 130: "O those who believe, do not consume up riba, doubled or multiplied."

Finally, the fourth stage of prohibition of *riba* came in the most comprehensive and damning indictment of *riba* and was delivered in the Qur'an in Surah al-Baqarah, verse 275-280: "Those who take usury will not stand on the Day of Judgement except as he who has been driven mad by the touch of the Demon…O you who believe, give up what remains of riba if you are believers. But if you do not then listen to the declaration of War from Allah and his Messenger (SAW). If you repent, yours is your principal and nothing more…"

Khir *et al.* (2008) explained that *riba* can be categorised into *riba duyun* involving loan contracts and *riba buyu'* which relates to *riba* concerning trade or sales transaction. *Riba duyun* is a debt usury that occurs in lending and borrowing activities as a result of any unjustified increment in borrowing. The raise may be paid in kind or money above the original value of the loan, and as a condition imposed by the lender or voluntarily by the borrower in the contract. Under *riba duyun*, there is two sub-categories classified as *riba qardh* and *riba jahiliyyah*. *Riba qardh* is defined as any predetermined benefit for the owner of debt stated in the contract, which the debtor needs to fulfil. For example, when *A* borrows $10,000 from *B* and *B* needs to pay an additional 10% of the loan (which is $1,000) in one-year on top of the original amount. As for *riba jahiliyyah*, there is no *riba* involved at the beginning of the contract. However, it may occur when the creditor charges the debtor a penalty due to his inability to service the loan within the stipulated time such as when a bank charges interest to credit card transactions due to late repayments.

Riba buyu' occurs in sales and trading transactions, which involves a contract in which a commodity is exchanged for a similar commodity but in unequal amounts and the delivery of one of the items does not occur on the spot. This type of *riba* may occur out of an exchange between two *ribawi* materials of the same kind, where the necessary rules are not observed. *Riba buyu'* can be further classified into *riba fadhl* and *riba nasiah*. *Riba fadhl* involves unequal barter exchange of *ribawi* materials in terms of quality or quantity. It applies to the purchase and sale of homogenous commodities, where one commodity is exchanged for the same commodity but in different quantity, regardless of the quality. For example, a trade involving an exchange of 100kg of long grain rice with 50kg of *basmathi* rice (quantity factor). As for *riba nasiah,* it refers to

any delay or postponement in the exchange of *ribawi* materials. For this type of *riba*, the *ribawi* materials exchanged are of equal weights, measurements or numbers but the exchange is not made at the same time. For instance, an exchange of £10,000 with RM50,000 between a money changer and its customer but not on the same day (time factor).

Khir *et al.* (2008) further commented that *ribawi* materials are goods subject to *Shari'ah* rules on *riba* in sales, whereby items sold by weight and by measures as Prophet Muhammad stated:

> "Sell gold in exchange for equivalent gold, sell silver in exchange for equivalent silver, sell dates in exchange for equivalent dates, sell wheat in exchange for equivalent wheat, sell salt in exchange for equivalent salt, sell barley in exchange for equivalent of barley, but if a person transacts in excess, it will be usury (riba). If the exchange was between different kinds, you can buy and sell them anyhow you like, as long as it is hand-to-hand (on the spot)."

According to Saat *et al.* (2011), *ribawi* materials are divided into commodities and the mode of the price for exchanging commodities. Every basis has a class of varieties (kind) such as foodstuffs as a type of asset (basis) while grains, meat and vegetables are its varieties. Similarly, gold, silver, and currency are the varieties of the medium of exchange. The example of the types of *ribawi* materials can be viewed in Table 2.1.

Table 2.1: Types of *Ribawi* Materials

Medium of exchange	*Foodstuffs*
Gold; in any form	**Grains**; rice, wheat, corn
Silver; in any form	**Meat**; beef, mutton, chicken
Currency (currency of each country is considered as different kind -Malaysian Ringgit, US Dollars, UK Pounds	**Vegetables**; tomatoes, beans
	Fruits; apples, oranges
	Salts; salt, sugar, condiments, medicines

With a view to omit *riba buyu'* in sales and trading transactions involving *ribawi* materials as described above, participants need to adhere to certain rules of the exchange. The rules are listed in Table 2.2.

Table 2.2: Islamic Ruling on *Riba* in Trading

Exchanges	*Rules*
1. *Ribawi* materials of the **same** kind and the **same** basis. • E.g. Five grams of 916 gold exchanges with five grams of 875 gold with payment and delivery made at the same time.	1. Materials must be of the same weight, measurement or number of units regardless quality. 2. Exchange of goods must be done immediately *i.e.* on the spot and cannot be deferred. 3. Payment must be on cash terms.
2. *Ribawi* materials of a **different** kind and the **same** basis. • E.g. Five grams of gold for US$100; RM3,500 for US$1,000; one barrel of palm oil for two barrels of rice)	1. The difference in weight, measurement or number of units is allowed. 2. Exchange of goods must be on the spot. 3. Payment must be on cash terms.
3. Ribawi materials of **different** kind and **different** basis. • E.g. 10kgs of dates for one gram of gold; 30kgs of tomatoes for £50.	1. No rules imposed by this exchange. 2. The difference in weight, measurement or number of units is allowed as long both parties agree to the terms involved. 3. Exchange of goods can be done immediately or deferred.

In sum, the prohibition of *riba* is very stringent in Islam due to its implication to the public. The rich can make easy money by charging *riba* to the needy and solely depend on this means without involving in a trade or any part of the economic system of the society (Iqbal, 2007; Khir *et al.*, 2008; Lewis and Algaoud, 2001; Saat *et al.*, 2011).

2.2.2 *Gharar*

As stated by Iqbal (2007), the meaning of *gharar* is 'to expose oneself or one's property to hazard unknowingly'. From a business point of view, *gharar* means to engage in a project without having adequate understanding about it or being involved in a venture with excessive risk. *Gharar* also occurs when the parties involved are unaware of the consequences of a contract.

According to Saat *et al.* (2011), *gharar* can be divided into two *gharar yasir*, which is minor or slightly uncertain, and *gharar fahish*, which means major or excessive uncertainty. For *gharar yasir*, it is tolerated and will not invalidate a contract, which

may be found in contracts such as unilateral or charitable contracts (gift or bequest). It is also found whenever there is a public need for the transaction or contract (consideration of *maslahah*) such as in the contracts of *bay' al salam* or *istisna'*. Meanwhile, *gharar fahish* is a type of *gharar* that cannot be tolerated and which may result in contract voidability. Major *gharar* is an uncertainty that is so high that it becomes unacceptable, or it is so vague that there are no means of quantifying it. It may arise when a buyer or seller is not capable of taking responsibility or making decisions such as when he or she is not mature. Furthermore, it may occur when the seller is prohibited from disposing of his property due to being declared bankrupt. As far as assets are concerned, major *gharar* may arise if the asset or property does not exist, or the asset is not particular or not in accordance with its specifications. *Gharar* on price is when the price is not mentioned in absolute amounts or that there are two prices in one contract. *Gharar* on contracts can occur if the contract is conditional (on the sale portion) or not expressed in an absolute and decisive language (with ambiguous words being used to state the terms such as 'shall', 'will or 'agree to').

It should be noted that the prohibition of *gharar* can not only eliminate the elements of cheating, fraud, and dishonesty, but can also minimise potential misunderstandings and conflicts between the contracting parties (Iqbal, 2007).

2.2.3 *Maysir*

Maysir or gambling is another element that Islamic banking and finance needs to avoid. The Qur'an (Surah Al-Maidah, verse 90) clearly states the prohibition of gambling or games of chance, and forbids any business transactions involving the element of gambling. The impermissibility of *maysir* is based on the implication from an agreement between contracting parties that resulted in the parties hoping to gain excessive profit from it with less consideration given to the risk of loss. All speculative contracts and contracts with no clear indication whereby any contracting parties may hold the advantage at the time the contract is entered into are also forbidden (Al-Omar and Abdel-Haq, 1996). Nevertheless, according to Iqbal and Molyneux (2005), there is a line between pure games of chance and activities that deal with uncertainties in business transactions that involve elements of chance and risk taking. The risks or

uncertainties that are allowed and part of human life are entrepreneurial risks that are prevalent in the business environment and risk arising from natural disasters.

2.2.4 Introduction of *Zakat*

Al-Omar and Abdel-Haq (1996) stated that *zakat* means 'the amount charged on individuals' wealth above an exemption level for the purpose of purifying their wealth and souls'. Besides Muslim individuals, business entities owned by Muslims are also subject to *zakat*. The main purpose of *zakat* is the redistribution of wealth and income in the society. The recipient of the *zakat,* as specified in the Qur'an, are the poor and the needy, zakat collectors, newly converted Muslims, travellers (when in difficulty), for the sake of Allah, the relief of captives and debtors, and others as clarified by Muslim scholars.

Furthermore, according to Lewis and Algaoud (2001), *zakat* ensures social justice and equal opportunity for the Muslim society, which is calculated at 2.5% of the liquid assets held for a full year minus a small initial exclusion called *nisab*. *Nisab* is similar to tax reliefs. The imposition of *zakat* is in line with the philosophy of Islamic economics whereby wealth cannot be left unproductive and should be invested to earn more by paying *zakat* (Ayub, 2002). Business assets must only be obtained from *halal* and permissible sources while the non-*halal* assets or revenues are not *zakat* obligated.

2.2.5 Prohibition of Production of *Haram* Goods and Services

The next principle of Islamic finance and banking is to observe the prohibition of the manufacture of products and services that are forbidden in Islam. This includes processing, producing, marketing, supplying, and selling non-*halal* (*haram*) goods and services under *Shari'ah* such as alcoholic beverages, pork, pornographies, prostitution, illegal drugs, arms, and armament, which are all considered to be against human well-being.

In assuring the practices of Islamic banks comply with the Islamic principles, Islamic banks should set up a Religious Supervisory Board (RSB). The board should consist of Muslim jurists who operate as advisers to the banks. This arrangement will ensure Islamic banks do not finance activities involving *haram* items. Islamic banks are

encouraged to produce needed goods and services such as food, clothing, shelter, health, and education.

2.2.6 Introduction of *Takaful*

Apart from the elements mentioned above, according to Lewis and Algaoud (2001), another element that should be included as part of Islamic financing principles is the provision of *takaful* (Islamic insurance). Many Muslim scholars associate conventional insurance to gambling which is prohibited in Islam. It is due to the element of *gharar* and *maysir* in the conventional insurance that renders it prohibited and not the concept itself. Most insurance companies operate their business by investing their collection of premiums and reinsuring with other insurers that contradict *Shari'ah* regarding *riba*, *gharar*, and *maysir*. The only type of insurance consider lawful according to *Shari'ah* is mutual (joint guarantee) insurance. From this issue, in 1985, the OIC Islamic *Fiqh* Academy called upon Islamic countries to set up cooperative institutions that offer cooperative insurance and reinsurance contracts based on voluntary contributions and cooperation.

2.3 ISLAMIC FINANCE INSTRUMENTS AND PRODUCT DEVELOPMENT

Similar to a conventional bank, an Islamic bank operates to mobilise funds from the depositors and supply the funds to the borrowers. However, unlike the conventional banks that profit from the difference in the rate of interests for obtaining funds from depositors and supplying the funds to the borrowers, an Islamic bank performs the functions using various financial contracts for both deposits and lending activities.

According to Khan (2007a), conventional banks have operated as early as in 19th century in the Muslim world. However, during the 1950s, due to the growing need for a *Shari'ah* based financial system from traders and entrepreneurs, economists and *Shari'ah* scholars started to develop theoretical works to substitute for the conventional system. Kahf and Khan (1992) and Khan (2007a) elaborated that Quraish and Uzair come out with the theory of 'profit sharing principle' (PSP), meanwhile, Nejatullah Siddiqi contributed to the development by introducing the theory of 'profit and loss sharing (PLS) and leasing'.

Khan and Bhatti (2008) explained that the basic modes of financing for the Islamic banking model can be categorised into primary instruments based on PLS and secondary instruments including other interest-free funding methods. On the other hand, Ismail (2010) classified the prime contracts in Islamic banking into six to include contract of profit sharing, contract of sale, contract of deposit, contract of *wakalah* (agency), contract of gift, and contract of security.

2.3.1 Contract of Profit and Loss Sharing

The foundation of profit and loss sharing contracts is based on *mudarabah* and *musharakah* principles, which act as a form of partnership between financier and entrepreneur.

Mudarabah is a passive type of partnership whereby the financier or capital provider (*rabb al-mal*) and entrepreneur or working partner (*mudarib*) embark on a venture or business together. *Rabb al-mal* cannot become involved in the management of the company and acts as a pure investor. The profits from this venture will be distributed between both parties based on a profit sharing ratio agreed upon at the time of the contract. However, if any loss occurs, the *rabb al-mal* will bear the complete loss, and the *mudarib* bear losses in terms of time and efforts. The *Rabb al-mal* is not liable for losses beyond his capital contribution (Iqbal, 2007; Kahf and Khan, 1992; Lewis and Algaoud, 2001; Warde, 2000).

Musharakah has similar characteristics to *mudarabah* except that partners can become involved in the management of the venture. Under a *musharakah* contract, the transaction is based on equity participation in which partners contribute both capital and labour. Partners will share the profits and losses by equity contribution ratio which must be agreed at the time of entering the contract. However, it is acceptable to have profit sharing not according to the proportion of shares (on agreed ratio between partners) but the liability is strictly limited to the contribution made by partners to the total capital. Similar to *mudarabah*, partners are not liable for losses beyond their capital contribution (Iqbal, 2007; Kahf and Khan, 1992; Lewis and Algaoud, 2001; Warde, 2000).

2.3.2 Contract of Sale

Murabahah is one of the products prevailing in the market during the initial introduction of Islamic banking. The word *murabahah* is derived from the Arabic word *ribh* which means profit. *Murabahah* can be defined as a sale transaction on a mutually agreed margin of profit. The seller is obliged to declare his cost and profit and the buyer must agree to the terms. For instance, a customer wants to buy a computer that cost RM8,000 from a vendor. The customer goes to a bank for financing, and the bank will purchase the equipment from the supplier and sell it back to the customer at RM9,000 with RM1,000 as profit for the bank. The financing repayment usually on an instalment basis. Islamic banks widely use *murabahah* in many financing contracts such as for cars, household appliances, machinery, but mostly for short-term trade (Ayub, 2002; Khan, 2007b).

For purchases that require a longer term of financing which is similar to *murabahah* is known as *bay' bithaman ajil* (BBA). BBA facility is widely used in Malaysia for funding and acquisition of assets, and the payment is usually based on an instalment basis over a longer period than *murabahah* facility repayments (Ismail, 2010). *Bay' al-salam* is a contract whereby full payment is made in advance while the delivery of the goods will be fulfilled at an agreed future date. However, according to *sunnah* and *ijma'* (consensus), *bay' al-salam* is only applicable to fungible products for which the characteristics and quality of the products can be precisely expressed in advance. At the point of contract, the product is not necessarily in existence but the price of the goods, delivery date, and place of delivery must be agreed by the contracted parties. This arrangement is necessary to avoid any uncertainty (Iqbal, 2007; Iqbal and Molyneux, 2005).

As for *istisna*, the producer agrees to supply and deliver a particular product in a specified quantity at an agreed time in advance. The price also needs to be set at the point of contract. However, unlike *salam*, payment is not required at the beginning of the contract. The buyer can pay in instalments while waiting the progress of the delivery or partly at the start of the contract and the remaining during the delivery (Iqbal, 2007).

Another important secondary instrument is *ijarah* or leasing. In this contract, no goods or assets will change ownership but only the usufruct. The owner of an asset or a lessor will allow another person or lessee to enjoy the usufruct of the property with the exchange of rental. During the contract, all costs of repairs, insurance, and damages will be borne by the lessor (Khan and Bhatti, 2008).

2.3.3 Contract of Deposit

Wadiah is a contract between the owner of the goods and its custodian with the intention of protection from being stolen, misplaced, or destroyed and to ensure safe custody (Ismail, 2010). According to Khir *et al.* (2008), the two types of *wadiah* are *wadiah yad amanah* and *wadiah yad dhamanah.* For *wadiah yad amanah,* Islamic banks act as a trustee to the funds (act of trust) and are not allowed to utilise the funds. In the case the funds or money under custody is accidently lost or destroyed, the custodian is not obliged to replace or compensate the items. As for *wadiah yad dhamanah*, Islamic banks are responsible in a form of a guarantee (act of guarantee). If the funds are pooled together and utilised, it is compulsory for the bank to return the funds as and when requested by the customers.

2.3.4 Contract of *Wakalah*

Wakalah implies a kind of delegation of duty to another person for specific functions and under specific provisions. In a contract of agency, the person who authorises the power is called the principal. The other party who selected to perform a particular task is known as the agent (*al-wakil*). Finally, the subject matter of which the authorisation is granted to use the privilege is referred to as the object (*al-mawkil bih*). There are two types of *wakalah.* The first type is *wakalah mutlaqah* where an agent is given full liberty to exercise the power. Second, *wakalah muqayyadah* is where an agent is bound by certain requirements before he can exercise his power (Iqbal and Mirakhor, 2011; Ismail, 2010).

2.3.5 Contract of Charitable / Gift (*Hibah*)

As described by Ismail (2010), *hibah* is a token of appreciation given voluntarily by a debtor to a creditor in return for a loan or given by a bank to its depositors for saving

with them. The practice is considered necessary especially in a dual banking system like Malaysia to remain competitive with its conventional counterparts. However, Islamic banks are not allowed to declare nor promise any amount of *hibah* in advance as this will be comparable to *riba*.

2.3.6 Contract of Security

Kafalah or suretyship is a contract whereby one party gives a surety (guarantor) to a third party. The guarantor agrees to release a liability of the third party in case the third party defaults in fulfilling its obligation (Saat *et al.*, 2011). Dusuki (2012) and Ismail (2010) further categorised *kafalah* into *kafalah bi al-mal* which is a guarantee to return an asset to its owner, and *kafalah bi al-nafs* which is a guarantee to bring someone to a specific authority such as the judiciary. Islamic banks use *kafalah* in the form of Shipping Guarantee (SG-i) in which a bank grants a facility to importers for the clearance of goods at the port. This arrangement allows shipping companies or agents to enable the importers to take the delivery without the original Bill of Lading (BL).

As for *rahn*, it simply means Islamic pawning. It is an arrangement whereby a valuable asset is placed as collateral for a debt. The collateral may be utilised to repay the debt in the case of default (Dusuki, 2012; Saat *et al.*, 2011). *Rahn* in modern application may take either a form of papers such as property documents, vehicle documents, *sukuk*, shares or objects like ornaments and jewellery as collateral. In the event of default, the asset can be liquidated to settle the outstanding amount with the consent of the debtor and any balance will be returned to the debtor.

2.3.7 Other Products Development

During the 1990s and 2000s, namely in the globalisation era of Islamic banking and finance, there was an increase in demand for more sophisticated Islamic finance products to fulfil the needs of higher earners or corporate clients. The introduction of *sukuk* and *takaful* in the growing Islamic financial market made Islamic banking and finance more attractive including to the conventional players.

Sukuk is a pooled securitisations instrument similar to conventional bonds. The contract is based on returns from trading or production of real assets or their usufruct. The *sukuk*

holder secures an ownership over the underlying assets and collects rental or interest-free payment until the *sukuk* matures or is sold by the owner. *Sukuk* are usually used for financing projects involving infrastructure or development (Iqbal and Molyneux, 2005; Khan and Bhatti, 2008). According to Dusuki (2012), the *Shari'ah* contracts currently being used include BBA, *murabahah*, *salam*, *istisna'*, *ijarah*, *kafalah*, *mudarabah*, and *musharakah*. There is no preference for the usage of one contract to the other. It all depends on the factors such as the economic objectives of the issuer, the availability of the assets, and level of liability of a company. Furthermore, credit rating of the issuer, the legal structure in the jurisdiction, and the consequences of a tax structure may contribute to selection. *Sukuk* can be classified into sales based (*e.g.* BBA, *murabahah, salam* and *istisna'*), lease based (*e.g. ijarah*), partnership based (*e.g. mudarabah* and *musharakah*), and agency based (*e.g. wakalah*).

As for *takaful*, as mentioned above, literally it means joint guarantee in Arabic. Numerous scholars agree that it is permissible to seek protection against the misery faced by human beings. *Takaful* activities are based on mutual sharing and co-operation in protecting against risk either for individuals or businesses. In conventional insurance, there is an element of *gharar* in terms of uncertainty in life. However, in *takaful*, that element can be acceptable by dividing the premium collected from policyholders into investment and *tabarru'* (donation). As the donation is a charitable act and not subject to commercial law, the element of *gharar* can be tolerated. As for the investment portion, *takaful* companies will only invest in *Shari'ah* based opportunities, hence, removing the element of *riba* in the investment. The two different models being used are the *mudarabah* model and *wakalah* model. Under the *mudarabah* model, the *takaful* company acts as *mudarib* and keeps a certain amount of profit as agreed. As for the remaining profit, it will be deposited into the policyholder's account. While under the *wakalah* model, the *takaful* company charges a fixed fee to policyholders and all the profits will be credited to the policyholder's account (Iqbal, 2007). Dusuki (2012) further explained that *takaful* operators nowadays also use *ju'alah, waqf*, and a hybrid of the two contracts. *Ju'alah* refers to a commitment to pay a specified reward for the performance of a prescribed task. For this type of arrangement, the participants collectively appoint the operator to manage the *takaful* fund, in a prescribed manner, for a particular reward if done accordingly. Payment is based on the actual output and

performance. As for *waqf*, it is a unilateral contract to renounce a right over the property and allocate it for the general usage of the usufruct by the specified beneficiaries. Participants will give contributions into a *waqf* fund and will lose the right to its contributions, and the *takaful* operator will act as a trustee of the *waqf* fund. Additionally, there are two type of hybrid models. First, a hybrid of *wakalah* and *mudarabah* model (currently being practiced by Abu Dhabi National Takaful Operator). Second, a hybrid of *wakalah* and *waqf* model (a newly proposed model and currently under review).

Besides *sukuk*, Issoufou (2012) states that more instruments are being introduced in Islamic money markets and capital markets. Among the instruments are Islamic derivatives such as Islamic options, futures, and swaps. Moreover, Jalil (2012) mentions that further development of technical products is in demand including Islamic unit trust, Islamic Real Estate Investment Trusts (i-REITs), and Islamic stock broking.

2.4 CONCLUSION

The chapter examined the principle and aspects of Islamic banking and finance. The introduction focused on the brief history of Islamic banking and finance in the Middle East and North Africa (MENA) region and the development of the rest of the world including Malaysia. The chapter also discussed the types of instruments available and used by Islamic banks and how they evolved over time.

The following chapter discusses bank performance analysis and competition in the banking sector. The first section consists of three parts. The first part provides conceptual definitions of bank performance analysis followed by a deliberation of the methods and techniques commonly used in the field in measuring bank performance. The final part presents a sample of empirical research corresponding to the discussed methods and techniques. The second section examines competition in the banking sector. It explores the structural and non-structural methods of measuring bank competition and continues with a review of empirical research related to these methods.

Chapter 3

BANK PERFORMANCE AND COMPETITION ANALYSIS: A LITERATURE SURVEY

3.1 INTRODUCTION TO BANK PERFORMANCE

It is becoming increasingly important for banks in Malaysia to compare their performance with others to remain competitive and relevant in the market. Recent developments in the Malaysian Islamic banking and finance sector have heightened the need to address this particular matter, especially after the process of liberalisation began in 2004 when the Malaysian government opened the door to three foreign Islamic banks to operate in Malaysia.

This chapter discusses the theories and practices in analysing bank performance and competition in the banking sector. The first section consists of three parts. The first part provides conceptual definitions of bank performance analysis followed by a deliberation of the methods and techniques commonly used in measuring bank performance. The final part presents a sample of empirical research corresponding to these methods and techniques. The second section examines the competition in the banking sector. It explores the structural and non-structural methods of measuring bank competition and continues with a review of empirical research related to these methods.

3.2 CONCEPTUAL DEFINITIONS

Typical bank activities involve receiving deposits from customers and channelling it to lenders with higher margins. In determining how good banks carry out these activities, a few measurements need to be put in place. The performance of a bank is not judged by merely looking at its profits. In measuring the bank's performance as a whole, the assessment will need to be beyond that.

Performance can generally be defined as a measurement of achievement of any given task or index against a predetermined standard or goals. As for financial institutions, a performance is a measure of the outcome of the bank's policies and operations with regards to both monetary and non-monetary outputs. According to Bikker and Bos (2008), many economic texts define performance as competition, concentration, efficiency, productivity, and profitability. However, most of the literature focuses on profitability and efficiency as the basis for measuring bank performance. Researchers also give an alternate definition of bank performance by explaining the importance of profits to shareholders. Shareholders will typically seek to maximise profits, and this can be achieved by maximising revenue and minimising costs. On top of that, depending on the market power, one bank may have the influence to increase the output prices and reduce the input prices to achieve the goal of profit maximisation.

Iqbal and Molyneux (2005) characterised the performance of banks in five elements; soundness, prudence, effectiveness in the use of funds, economy, and profitability. The soundness of a bank is determined by the banks' capability to handle its commitment during difficult or emergency situations.

As banks have two opposing objectives, which are liquidity and profitability, the act of prudence is necessary for balancing both elements. It is an obligation on the bank to maintain some part of its deposits in a liquid form intended to help banks to prevent a liquidity crisis. The rule is important in ensuring the funds are available when customers want to make a withdrawal on their deposits. It is also crucial for maintaining depositors' trusts and confidence.

Iqbal and Molyneux (2005) appraised effectiveness by measuring how effective a bank utilises its financial resources in earning income. Deployment ratio is used to measure the effectiveness by adding total investment and total deposits and dividing it by total equity.

Another important element in defining the performance of banks is cost efficiency. Iqbal and Molyneux (2005) stated that there are no standard ratios in analysing cost efficiency in academic literature. As a result, they benchmark *The Banker* magazine that uses cost to income ratio to publish annual top 1,000 banks in the world since 1997.

As mentioned earlier, Heffernan (2005) considered efficiency as one of the aspects that is important in measuring and benchmarking bank performance while facing competition. Hughes and Mester (2008) described efficiency as bank's decision in choosing production plan that can minimise costs based on given output mix and input prices, or to maximise profits based on given input and output prices.

In exploring, Mester (1997) employed three diverse efficiency approaches *i.e.* cost, standard profit, and alternative profit efficiency. Cost efficiency measures the distance between a bank's costs against the best-practice bank's costs within the same market. Meanwhile, standard profit efficiency measures how close a bank in producing maximum possible profit based on given variables. Finally, alternative profit efficiency gauges the closeness a bank can earn maximum profits based on given output levels rather than input prices. The alternative profit function utilises the same dependent variable as the standard profit function and the same exogenous variables as the cost function.

On the other hand, Hughes and Mester (2008) measures efficiency based on structural approach that consists of cost minimisation, profit maximisation, and managerial utility maximisation. The managerial utility maximisation measures the performance of managers or also known as pure technical efficiency. Bikker and Bos (2008) explained the general concept of efficiency as the differences between observed and optimal values of inputs, outputs, and combinations of inputs and outputs. Besides that, Bikker and Bos (2008) also suggested to look into inefficiency as well where a bank need to produce efficiently in the long run in order to sustain in the market by better utilisation of inputs and produced outputs in the inexpensive possible way.

The final element of banks' performance according to Iqbal and Molyneux (2005) is profitability. They measure the profitability of the banks by using return on assets (ROA) and return on equity (ROE). ROA is a significant ratio for comparing the efficiency and operational performance of banks, as it looks at the earnings generated from the assets financed by the banks. As for ROE, it measures how a bank generates earnings from shareholders' funds.

Harker and Zenios (2000) defined banks as a business entity with profit as their primary goal. Therefore, they define performance as an economic accomplishment evaluated by various financial indicators. Among the indicators that are important to measure performance are the price-to-earnings ratio, the bank's stock beta and alpha and Tobin's q-ratios for short and long-term financial performance. The authors further discussed that banks play a role as a service provider and intermediaries to clients. The banks also need to measured quality of service rendered to customers and their efficiency to manage risks.

The American Customer Satisfaction Index (ACSI) is referred as an example to measure customers' satisfaction with regards to the quality of service provided by firms. The index indicates that the higher the customer satisfaction, the higher the client loyalty. Conversely, it will lower the price elasticity, transaction costs, and cost to attract new customers, and protect the current market share from rivals.

As for risk management, Harker and Zenios (2000) believe that the higher the risk for commercial banks, the lower the value of the banks. Therefore, the handling of risk matters should be taken into consideration when seeking to maintain the value of the banks.

As a summary, based on the literature review above, the study employed profitability and efficiency in measuring the performance of Islamic banks in Malaysia. The dimension of efficiency in this study focuses on the Islamic banks' efficiency in producing the maximum output from the minimum quantity of inputs. The performance measurements are important to the study as linkages to the nature of competition in the country, which is very much significant to the study. The performance measurement method was chosen due to its relevance and wide employment in measuring performance of banks all over the world. The methods and techniques in measuring the bank performance will be discussed in the next section.

3.3 MEASURING BANK PERFORMANCE: METHODS AND TECHNIQUES

Several methods and techniques are used by various researchers with regards to measuring banks' performance. In this regard, there has been a typical focus on measuring profitability and efficiency. The following section summarises the methods used in these two categories.

3.3.1 Financial Methods / Ratios

The most common methods of measuring profitability are by using various financial ratios. Sabi (1996) identifies nine indicators that grouped into three profitability measures, liquidity and credit risk, and commitment to the domestic economy. The measurements are as follows:

Profitability measures can be categorised as follows:

(i) Return on assets (ROA) = Profit after tax / total assets, which suggests how well the bank uses its assets into returns.

(ii) Return on equity (ROE) = Profit after tax / equity, which indicates the rate of return to capital base.

(iii) Operating profit ratio (OPR) = Operating profit / total assets, which shows the management's ability to maintain the growth of the profit with the rising costs.

(iv) Net interest margin (NIM) = (Interest received – interest paid) / total assets, which implies the management control over the bank's earning assets and ability to find the cheapest source of fund.

Liquidity and credit risk measures can be classified as follows:

(i) Liquidity ratio (LIR) = (Cash + security) / total assets, which indicates the bank's ability to meet demands from customers with regards to withdrawals and new loans.

(ii) Loan deposit ratio (LDR) = Loan to consumers / deposits, which signifies the liquidity and credit risks of the bank. A higher ratio shows potential liquidity difficulty and risky financing portfolios assets will increase the bank's credit risk.

Commitment to domestic economy related ratios are classified as follows:

(i) Long-term loan (LTL) = long-term loans / total loans; LTL indicates bank's commitment to financing long-term and development projects.

(ii) Security ratio (SR) = treasury security / total assets, which implies the bank's contribution to domestic projects.

(iii) Loan ratio (LR) = loans to clients / total assets, which measures bank's lending activities to consumers and commitment to the local economy.

As one of the first papers on performance measurement for Islamic banks, Samad and Hassan (1999) adapted the method used by Sabi in their paper comparing the performance of Bank Islam Malaysia Berhad (BIMB) with eight conventional banks. They implemented 13 ratios that are similar to Sabi's approach but more suitable for Islamic banks with no interest-related ratios included. Their ratios can be listed as follows:

Profitability ratios:

1. Return on assets (ROA) = Profit after tax / total assets.

2. Return on equity (ROE) = Profit after tax / equity capital.

3. Profit expense ratio (PER) = Profit / total expense.

In these ratios, a higher ratio shows that a bank is cost efficient and can generate higher profits with a given expense.

Liquidity ratios:

4. Cash deposit ratio (CDR) = Cash / deposit

The ratio indicates how a bank maintains its cash levels in serving the demand from depositors in the event they need to withdraw the money.

5. Loan deposit ratio (LDR) = Loan / deposit

The results of this ratio indicate that a higher LDR suggests a bank utilises most of the deposits by lending out and maintaining less cash.

6. Current ratio (CR) = Current asset / current liability

The ratio indicates the bank's ability to serve its short-term debts and payables with its current assets such as cash, inventories, and receivables.

7. Current asset ratio (CAR) = Current asset / total asset

The results of this ratio indicates that a high CAR implies a bank possess a high liquid asset.

Risk and solvency ratios:

8. Debt equity ratio (D/E) = Debt / equity capital

A lower D/E signifies the excellent capabilities of a bank to absorb any financial impact from asset depreciation and loan losses.

9. Debt to asset ratio (DTAR) = Debt / total asset.

This ratio shows a bank's financial abilities to repay its creditors.

10. Equity multiplier (EM) = Total asset / share capital

A higher EM suggests a bank's reliance on debt to finance its assets.

11. Long-term loan ratio (LTA) = Long-term loan / total loan.

LTA signifies the dedication shown by a bank by supporting long-term projects.

12. Government bond investment (GBD) = Deposit invested in government bond / total deposits.

A higher GBD indicates a bank that is more liquid and less risky.

13. *Mudarabah-musharakah* ratio (MM/L) = *Mudarabah-musharakah* / total loans.

The ratio measures the commitment of a bank towards community development.

In addition to ratio related financial analysis, there are numerous econometric methods and models, which are presented in the following section.

3.3.2 Econometrics and Statistical Methods and Models

According to Berger and Humphrey (1997), there are no less than five types of statistical methods being used widely in conducting efficiency research. The methods include Data Envelopment Analysis (DEA), Free Disposal Hull (FDH), Stochastic Frontier Approach (SFA), Distribution-Free Approach (DFA), and Thick Frontier Approach (TFA). Meanwhile, Mostafa (2007) narrowed it down further that the efficiency performance of the banks is mostly analysed based on the methods are Stochastic Frontier Approach (SFA) (parametric) and Data Envelopment Analysis (DEA) (nonparametric).

SFA is the economic methodology that measures performance through benchmarking in various economic input-output systems. The method of analysis enables the researcher to explain the gap between the current performance and best performance of the banks. Berger and Humphrey (1997, p. 6) described SFA as, "a functional form for the cost, profit, or production relationship among inputs, outputs, and environmental factors and allows random errors". According to Kumbhakar and Lovell (2003), SFA added the random shocks element in the model which may impact production process

such as weather changes or economic downturns. However, it was pointed out by Hasan (2005) that the functional form and distribution assumptions for the SFA are based on data prior to estimation.

Meanwhile, DEA is a technique based on the computation of comparative ratios of outputs and inputs for each unit related to efficiency score. It measures the efficiency of a decision making unit (DMU), and in the case of this research, this unit is considered to be a bank (Ray, 2004). DEA is a technique that has no fixed structure imposed on the data in determining the efficient units that lead to minimal specification error. It also uses a method that can handle multiple variables and relations (Cooper *et al.*, 2007). The central feature of the DEA is related to the bank's efficiency that can be assessed based on other observed performance. Despite the advantages, one of the disadvantages of DEA is that the technique assumes data to be free from measurement error (Avkiran, 1999). If the data has been violated, the results from the findings could not be interpreted with confidence. Similar to other analyses that rely on reliable data, DEA is particularly sensitive to inaccurate data. The units deemed efficient in determining the efficient frontier and have an effect towards the efficient scores computed under the frontier. According to Ray (2004), results of DEA have no standard errors which make it difficult for hypotheses testing. Furthermore, any variation from the frontier will be considered inefficient and has no room for random shocks. Coelli *et al.* (2005) suggested to use a distance functions similar (extension) to DEA *i.e.* the Malmquist Productivity Index in measuring technical efficiency change and technical change elements. This method is suitable in describing multi-input and multi-output functions, which are closely related to the banking sector. Coelli *et al.* (2005) further explained that the index measures the productivity change between two data points by calculating ratios of a particular value (increase/decrease rate) between two periods. Mayer and Zelenyuk (2014) described that a group aggregation results allowing reallocation with the Malmquist Productivity Index will enable consideration of the change in group productivity over time, allowing reallocation of inputs across DMUs (when considering output orientation).

The application of the SFA and DEA techniques is divided into two stages. The first stage involves the estimation of efficiency and inefficiency scores based on the objectives of the research. The scores compute the efficiency level and rank to indicate the banks relative performance. The next stage involves exploring the causal relationship between the inefficiency estimates against other relevant variables such as firm and location of the firm. Hasan (2005) commented that the frontier approach could be applied in any field of inquiry where variables yield to management.

3.4 SURVEYING THE EMPIRICAL LITERATURE ON BANK PERFORMANCE

Bank performance is of interest not only for the shareholders and management of the banks, but is also important to the central bank, the market, public, and academia. An extensive literature exists that investigates the various dimensions of bank performance through different methods of analysis. This section presents a sample of empirical research according to the type of method they used.

3.4.1 Empirical Studies Using Financial Methods and Ratios

Haslem (1969) assessed the profitability of commercial banks in United States for 1963 and 1964 using a cross-sectional aggregation of 64 banks' operating ratios. The Wherry-Doolittle approach was used to identify the influential variables between the operating ratios and later used to develop linear regression. From the Wherry-Doolittle analysis, the author found that a maximum of 12 operating variables can be included in any estimating equations. The result shows that in 1963, the coefficients of multiple determination (R^2) range from 0.51, which uses top three operating variables to 0.77 using 12 operating variables. Meanwhile, in 1964, the study indicated a slight increase in R^2 with the value ranging from 0.62, which derived from three operating variables to 0.77, which employs 12 operating variables. The figures show the reliability of the selection of operating variables included in the equations to evaluate profitability.

Sabi (1996) also used ratios to analyse the performance of foreign and domestic banks in Hungary for the 1992 to 1993 period. The author tested nine variables, categorised into profitability measures, liquidity and credit risk, and commitment to the domestic economy. The findings from the paper in terms of profitability (ROA, ROE, OPR and NIM ratios) showed that the foreign banks are more profitable compared to the domestic banks. The results also revealed that the foreign banks are less exposed to liquid and credit risks and take a cautious approach to long-term loans to customers.

Samad and Hassan (1999) compared BIMB against eight conventional banks for the 1984 to 1997 period using various financial ratios. The result suggested that BIMB was more liquid and less risky compared to the conventional banks. Another interesting result of the research indicates that the reason for little activity in profit sharing and joint venture profit sharing in Malaysia during that period resulted from the lack of product knowledge by bankers, particularly in choosing, evaluating, and managing such projects.

As for Demirguc-Kunt and Huizinga (2001), they assessed the impact of financial structure on bank profitability for most developed and developing countries during the 1990 to 1997 period by calculating ratios. They characterised bank performance into two bank profitability and bank interest margin. The outcome of the research shows that banks from underdeveloped financial systems have higher profit margins compared to the more developed systems. They suggest that banks in developed financial systems are exposed to tougher competition with higher efficiency and are hence lower in terms of profits.

In another study, Bashir (2001) discovered the determinants of performance of Islamic banks in Middle Eastern countries from 1993 to 1998 by using various financial ratios and macroeconomic indicators. The result shows that foreign banks are more profitable than the local banks with elements such as stable macroeconomic environment, financial market structure, taxation, and a larger loan to asset ratio resulting in higher profitability.

In their study, Micco *et al.* (2004) recorded 50,000 observations for 119 countries over the 1995 to 2002 period. The authors applied the correlation and regression based on various financial ratios to establish a connection between bank ownership and performance. Among the ratios the authors employed to measure profitability were Return on Assets (ROA) and Return on Equity (ROE). The results conclude that there is no correlation between bank ownership and performance in industrial countries but shows a strong relationship between the developing countries. Furthermore, the state-owned banks in developing countries have tendencies to have lower profit and higher overhead costs and non-performing loans compared to the private and foreign-owned banks.

Flamini *et al.* (2009) analysed the profitability of 389 banks in 41 Sub-Saharan Africa (SSA) countries from the 1998 to 2006 by using the ROA linear model. They found that a higher ROA for banks resulted from better credit risk, bigger size banks, product diversification, and private ownership. Macroeconomic variables were found to also influence the banks' earnings with policies that encourage minimal inflation, while steady growth will enhance credit progression. The outcome of the paper suggests that to bolster financial stability, banks in the region need higher capital requirements.

As for Ongore and Kusa (2013), they studied the effect of bank ownership structure on bank performance in Kenya. The authors utilised financial ratios such as ROE, ROA, and NIM as their dependent variables. For independent variables, they used capital adequacy, asset quality, management efficiency, and liquidity as bank-specific factors. For external factors, they employed GDP and inflation rate, while ownership status was the moderating variable. The findings showed that the internal factors significantly related to the performance of commercial banks in Kenya from 2001 to 2010 except for liquidity. Meanwhile, the external factors and ownership status seemed to be insignificant towards the profitability of the sampled banks.

Islam *et al.* (2014) examined the profitability of 15 second generation Islamic and conventional banks in Bangladesh between 2009 and 2011. Similar to previous studies, the authors employed ROA and ROE in measuring profitability. The results showed that the conventional banks performed better than the Islamic banks in the country to

conclude that the adoption of business policies and modes of operation of the banks are among the external factors that may affect profitability.

Zeb (2015) compared the performance of Islamic banks in Pakistan against the conventional banks between 2007 and 2010. The author used ROA, ROE, LR, LDR, D/E, Asset Utilisation (AU), and Income to Expense ratio (IER) in evaluating the performance of the selected banks. Additionally, the author employed primary data collection via distribution of questionnaires. It was found that the conventional banks suffered a slump in profitability during the Global Financial Crisis period due to costly mobilisation of deposits while the Islamic banks were not affected as much as conventional banks because of its investment towards real assets instead of financial assets, which limited their exposure.

3.4.2 Empirical Papers through Econometrics and Statistical Methods and Models

In analysing efficiency through econometrics and statistical methods, parametric and nonparametric approached can be used. Among the common methods widely adopted is Stochastic Frontier Approach (SFA) for parametric data, while for nonparametric data, researchers mostly apply Data Envelopment Analysis (DEA) or Free Disposal Hull (FDH).

3.4.2.1   Studies using the parametric approach

For the parametric approach, Mester (1993) used SFA in measuring banks efficiency in the Third Federal Reserve District which encompasses eastern Pennsylvania, the southern part of New Jersey, and Delaware in United States. By employing the SFA, a bank can be categorised as inefficient if their costs are greater than the supposedly efficient banks producing similar outputs at lower costs. The result in Mester (1993) shows that the banks' output levels and product mixes in the districts were cost-efficient. However, there was room for improvement in terms of cost savings from the usage of inputs. Mester (1997) later employed the same approach to compare the banks in the Third District with the rest of the country. The result indicated little difference in terms of *X*-inefficiency between districts and at the national level with differences ranging from 13% to 20%.

Ben Naceur (2003) used a combination of ratios and SFA to examine the main deposit banks in Tunisia during 1980 to 2000 through measuring the influence of bank's characteristics, financial structure and macroeconomic values on banks' net interest margin and profitability.

Bonin *et al.* (2005) investigated banks' efficiency in 11 transition countries for the 1996 to 2000 period and the impact made caused by the type ownership of the banks. The authors employed the SFA model to measure cost and profit efficiency. The result shows that privatisation of banks ownership will not increase bank efficiency as government banks are less efficient compared to fellow domestic banks. However, foreign banks are noted as more cost efficient and provide better services than other banks.

El-Gamal and Inanoglu (2005) utilised a combination of ratios and SFA analysis when investigating 53 Turkish banks for the 1990 to 2000 period. For the first part, the authors selected C.A.M.E.L (Capital adequacy, Asset quality, Management, Earnings, and Liquidity) as variables and computed the financial ratios for all the banks. The authors later used SFA in the second part of the analysis to determine the efficiency of the banks. The result shows that foreign banks have the advantage of a cheaper source of funds from abroad compared to the local private banks. Another important outcome is that state-owned banks are not less efficient than the private banks indicating that privatisation is not required.

In another study, Hao (2008) examined the impact of the increasing competition in the insurance industry in Taiwan by employing SFA using six-year data in a sample of 25 insurance companies. The outcome of the research indicates that on average, smaller companies are less efficient compared to the bigger companies whereby smaller companies are running at 70% higher on total costs than the larger companies.

Chen (2009) assessed the efficiency of ten Sub-Saharan African middle-income countries, which consists of 71 banks using SFA with a total of 392 observations across the selected countries. The result shows that foreign banks are more efficient compared to public and local private banks. The author further suggests that a bank can save between 20-30% of the total costs if they can operate efficiently.

Bazrkar and Khalilpour (2013) compared the efficiency of ten banks in Iran by using the DEA and SFA approaches. The variables used in SFA application were investments, granted facilities, deposits in other banks, and activities outside the balance sheet as input factors. For output factors, the authors employed input and labour cost, capital cost, and total cost. Data from 2005 to 2010 were gathered for their analysis. Results of the SFA showed that three out of ten of the Iranian banks were considered as high performance banks (Karafarin Bank, Bank Mellat and Bank Pasargad).

As for Mghaieth and El Mehdi (2014), they examined the cost and profit efficiency of Islamic banks before, during, and after the financial crisis of 2007 to 2008 by using the SFA approach. They used a sample of 62 banks from 16 countries, with six countries from Southeast Asia and ten countries from MENA. The selected dataset was from 2004 to 2010. The authors employed the intermediation approach with labour, physical capital, and financial capital as inputs, and deposits and investment services as outputs. On top of that, they utilised GDP, money supply, density of demand, inflation rate, and population density as macroeconomic factors. For the cost efficiency results, banks with high total assets and operation costs are more efficient. While for profit efficiency, banks with high costs generated high levels of efficiency.

Tabak *et al.* (2014) compared DEA and SFA results in measuring efficiency. They analysed the efficiency of domestic Chinese banks, which comprised of 461 annual observations from 65 banks from 2001 to 2012. For SFA, they used total interest expenses, total non-interest expenses as input variables, and deposits, loans, and liquid assets as output variables. The results between DEA and SFA showed some inconsistencies with regards to individual banks provide similar results when looking at the national level. They concluded that the domestic banks did not show any improvement on performance throughout the 2001 to 2012 period.

Parinduri and Riyanto (2014) examined the relationship between bank ownership and efficiency for banks in Indonesia after the 1997Asian financial crisis. The sample includes 144 banks operating in Indonesia between 2000 and 2005 on a quarterly basis. They included three inputs: labour (personnel expenses and total amount of assets), deposits (ratio of interest expenses to interest-bearing liabilities), and capital (non-

personnel expenses and total amount of fixed assets). For outputs, they utilised banks' loans, government bond holdings, securities holdings, and other assets. As for a set of ownership type dummies, they categorised it into state-owned, large private-domestic, small private-domestic, district government-owned, joint-venture, and foreign-owned banks. The results showed that every bank improved its cost efficiency after the crisis. Nevertheless, they identified the state-owned banks as the least efficient whereas joint-venture and foreign-owned banks possessed higher efficiency compared to the rest.

3.4.2.2 Studies using the nonparametric approach

In theory, DEA uses data on costs, outputs, and input prices from a sample of banks and establishes which bank produced outputs at specified input prices at lowest costs. Denizer *et al.* (2000) employed DEA when measuring bank efficiency of commercial banks in Turkey for the 1970 to 1994 period. The study indicates that banks will go through a two-stage process. First is the production stage whereby banks collected deposits from customers via resources, labour, and physical capital. Second is there intermediation stage where banks use their managerial and marketing resources to convert the deposits into investment. The results show that the liberalisation took place in the Turkish banking industry had adverse impacts in terms of efficiency. A major reason identified was the rising macroeconomic instability in the Turkish economy during the study period.

Halkos and Salamouris (2004) explored the performance of Greek commercial banks using six financial efficiency ratios. The ratios are return difference of interest bearing assets, ROE, ROA, profit/loss per employee, efficiency ratio, and net interest margin for the 1997 to 1999 period. Next, the authors develop a DEA model in analysing the efficiency of the banks, the result of which shows that the higher the total assets, the higher the efficiency level of a bank.

As for the case of Malaysia, Matthews and Ismail (2006) investigated the efficiency and productivity of local and foreign commercial banks during 1994 to 2000. In applying DEA, the authors used number of employees, fixed assets, and total deposits as inputs, and total loan, other earning assets, and other operating income as outputs. Once they determined the efficiency of the banks, the authors constructed the

Malmquist Productivity Index to determine the productivity growth for the banks. The outcome of the study shows that foreign banks are more efficient than the local banks, but the improvement in efficiency level was caused by technological change instead of improvement of efficiency.

In another study, Beccalli *et al.* (2006) applied both parametric and nonparametric approaches by investigating the efficiency of European banks listed in 2000. The result shows that a change in stock price may affect the cost-efficiency of a bank, especially in the DEA model thereby suggesting that an efficient bank will have a higher stock price in the market compared to inefficient banks.

Loukoianova (2008) analysed the efficiency and profitability of Japanese banks between 2000 and 2006. The author implemented cost and revenue efficiency using DEA and average ROA, ROE, and NIM to measure profitability. The overall result shows that Japanese banks recorded constant improvement since 2001. However, city and trust banks are more cost and revenue efficient than the regional banks.

Mokhtar *et al.* (2008) studied the measurement of efficiency of Islamic banking in Malaysia by employing DEA. The study compared the performance of full-fledged Islamic banks and the Islamic windows between 1997 and 2003. The results showed that the full-fledged Islamic banks were more efficient than the banks operated via Islamic windows with the Islamic windows of foreign banks performed better than the Islamic windows of the domestic banks. The Islamic banks are still considered less efficient than their conventional counterparts.

Kamaruddin *et al.* (2008) used DEA in their research in investigating 14 commercial banks who offers Islamic banking products that consist of two full-fledged Islamic banks and 12 conventional banks with Islamic windows in Malaysia from 1998 to 2004. The outcome of the research indicates that resource management and economies of scale contribute to better cost efficiency for both local and foreign banks and Islamic banks are more efficient in managing costs and generating more profit.

Keskin and Degirmen (2013), on the other hand, employed DEA together with the Malmquist Productivity Index in analysing the Turkish banking sector between 2004

and 2009. They grouped the banks into public-owned deposit banks, private-owned deposit banks, and foreign-owned deposit banks with a total of 31 banks between them. The authors adopted the intermediation approach with deposits and interest expenses as inputs, and financing and interest incomes as outputs. They found that the foreign-owned deposit banks were the most efficient banks in Turkey during the period due to positive movement in their technology, technical resources, and TFP.

Johnes *et al.* (2014) compared the efficiency of Islamic and conventional banks based on financial ratios and DEA. They examined banks from six GCC countries for the 2004 to 2009 period. Total loans and other earning assets were used as output variables while the inputs selected were deposits and short term funding, fixed assets, general and administration expenses, and equity. Based on financial ratio analysis, the authors found that the Islamic banks are less cost efficient than their conventional counterparts but performed better in terms of revenue and profit efficiency. As for DEA, the result showed that the Islamic banks performed poorly as compared to the conventional banks based on average efficiency scores.

Similar to Zeb (2015) and Mghaieth and El Mehdi (2014) who analysed the performance of banks due to global financial crisis, Anouze (2015) investigated the performance of banks in GCC by using slightly difference approach *i.e.* DEA and classification and regression tree (CART). Ranging from 1997 to 2007, the author observed a total of 68 banks across all six GCC countries with fixed assets, non-earning assets and deposits as inputs. For outputs, they applied investments, loans, off-balance sheet items, and net profit in their DEA analysis. The outcome of the paper showed that all GCC commercial banks' technical efficiency were relatively constant prior, during, and after the crisis. Banks in Saudi Arabia are considered the most efficient in the region followed by the UAE. The least efficient banks were from Qatar.

Srairi *et al.* (2015) studied the connection between Islamic bank efficiency and stock market performance in the GCC countries. By employing DEA, the authors surveyed 25 Islamic banks in the region during the 2003 to 2009 period. As for the variables, the authors specified employee expenses, other operating expenses, and loan loss provisions as inputs. For output variables, they chose net interest income and other

operating income. The results of the research pointed out that the Islamic banks' technical and pure technical efficiency in the region are on the rise over the period but still considered low compared to the conventional banks. They also found that small and large banks are more efficient than medium-sized banks. Additionally, technical and pure technical efficiency changes are positively related to share returns but changes in scale efficiency showed no influence on stock performance.

3.5   COMPETITION IN THE BANKING SECTOR

It is expected that competition causing Islamic banks to react differently to the market based on each bank's strengths and priorities, as a bank's strategies and campaigns may cause other banks to respond by matching it or they might not respond at all. Thus, banks have to develop the necessary strategies including marketing plans in order to be able to stay ahead of each other.

While the global history of Islamic banking can be traced back to the 1960s to Egypt, the emergence of Islamic banking in Malaysia can be marked with Tabung Haji in the similar period. However, establishing a commercial Islamic bank had to wait until 1983. Since then, Malaysia has become a leading country in terms of developing an aggressive approach for the development of its Islamic finance industry and its relevant infrastructure including human development. The opening of Islamic banking sector to competition by establishing new domestic Islamic banks and also licencing foreign Islamic banks to conduct financial operations in Malaysia has created a new dynamic. Thus, this research examines the impact of competition in the Islamic banking sector.

3.5.1 Measuring Bank Competition

Besides profitability and efficiency elements, competition is another component of performance that is crucial when discussing bank analysis. Bikker and Haaf (2002) and Boonstra and Groeneveld (2006) divide the measurement of competition into structural and non-structural approaches. The structural method investigates whether high market concentration leads to greater bank efficiency or encourages larger firms to collaborate with each other to gain higher market performance (Bikker and Haaf, 2002). Sloman and Hinde (2007, p. 15) define industrial concentration as, "the degree to which an

industry is dominated by large enterprises". On the other hand, the non-structural method attempts to respond to the theoretical and empirical shortages in the structural method. The latter method emphasises on the use of market power and analysis of banks' competitive conduct which are lacking in the structural method. However, the non-structural method tends to ignore the influence of concentration in its models (Bikker and Haaf, 2002).

3.5.1.1 Structural Approach

As mentioned earlier, the structural approach focuses on market concentration in determining a market structure. Bikker and Haaf (2002) further split the structural approach into formal and non-formal approaches. In general, most of the formal studies simplify the Lerner index of monopoly power (to describe a firm's market power) while the informal approach uses variables at will (not derived theoretically) in measuring the market structure (Bikker and Haaf, 2002).

Formal structural approach

Among the methods of formal structural approach that can be used in measuring the level of concentration in a market are the k bank concentration ratio (CR_k), the Herfindahl-Hirschman index (HHI), the Hall-Tideman Index and Rosenbluth index, the comprehensive industrial concentration index (CCI), the Hannah and Kay index, and the U index (Bikker and Haaf, 2002). The two most commonly-used methods in measuring industry concentration in a banking sector are CR_k and HHI (Bikker and Haaf, 2002; Young and McAuley, 1994). According to Molyneux *et al.* (2010, p. 3), the concentration measures based on CR_k and HHI, "aim to reflect the implications of the number and size distribution of firms in the industry for the nature of competition, using a relatively simple numerical indicators".

The k bank concentration ratio (CR_k)

Case *et al.* (2009) defined concentration ratio as the share contributed from the top firms' output (sales, deposits, financing) in an industry. Bikker (2004) explained that factors such as easy-to-use and limited data requirements cause the CR_k to be one of the most frequently used to measure concentration in the banking industry. The CR_k is

derived from the ratio of market share owned by the largest k banks in the industry, where k is a specified number of banks, often by looking at top four of the largest companies, or sometimes in a smaller or larger number (Young and McAuley, 1994). As the method shows its usefulness by being easy to calculate and understand, CR_k may pose some drawbacks. The CR_k may portray an incomplete picture of the concentration of firms in an industry since the ratio ignores the relative market share of the remaining firms which may indicate the level of competition of the entire market (Bikker, 2004). Furthermore, the method does not provide information about the distribution of the four largest firms, whether the four firms of equal sizes or if there is one dominant firm in the top four (Young and McAuley, 1994). In conclusion, the measurement of concentration ratio is based on total output production by a certain number of firms in the same industry. Concentration ratios usually measure the market share of the top four or top eight of the largest companies denoted as CR_4 and CR_8 respectively. The ratios are very useful in determining the degree of the market structure based on the market control of the biggest firms in the industry (Al-Muharrami *et al.*, 2006; Bikker and Bos, 2008; Bikker and Spierdijk, 2009).

Herfindahl-Hirschman index (HHI)

Case *et al.* (2009) described HHI as an index of market concentration derived by calculating the sum of the squares of market shares for each firm within the industry. Bikker (2004) considered HHI as one to the widely used measurements of concentration in theoretical literature and serves as a standard in evaluating concentration in various industries, including banking. HHI also assumes an important role in the enforcement process of antitrust laws in the United States (U.S.) whereby the U.S. Department of Justice uses HHI in guidelines evaluating mergers (see: The United States Department of Justice Website). According to Shughart (2008), key advantages of HHI include its computational simplicity, moderate data requirements, it includes data of all industry's members (unlike $CR_{k,}$ which may include top four firms only), and gives more weightage of market shares to the larger firms. However, results from the HHI can be considered ambiguous and not user-friendly (ranges from below 100 to above 1,800) to determine the market structure as compared to generic percentage scores for CR_k. Furthermore, HHI will require substantially more information than $CR_{k,}$ which may

consume more time to gather and analyse the data (Bikker and Haaf, 2002; Shughart, 2008; Young and McAuley, 1994). As a conclusion, the higher the market concentration, the closer the market can be considered as a monopoly market (above 1,800) while HHI scores of 100 and below indicates a highly competitive market (Bikker and Haaf, 2002).

Non-formal structural approach

Among the methods categorised under the non-formal structure approach are the structure-conduct-paradigm (SCP) framework and efficient structure (ES) hypothesis. As mentioned by Bikker and Haaf (2002), the SCP framework and ES hypothesis are classified as non-formal due to the nature of selection measures for the market structure not derived theoretically, but chosen at will. According to , market structure has a strong influence on performance of a business entity. This phenomena is called the SCP paradigm. The authors further explained that businesses may behave differently depending on whether they are in a highly competitive market structure or in a lesser competition market. Firms may have to be aggressive to remain competitive in the market. As for a less competitive market, there will be a high possibility that the firms may collude between them in reducing the uncertainties and further reduce competition. Either way, the market structure will influence the performance of the businesses. Bikker and Bos (2005) explained that SCP can measure the structure of a banking market by looking at the conduct of banks within the market which explains the banks' performance. The approach uses a regression model in determining the SCP hypothesis. Bikker and Bos (2005) also revealed that one of the advantages of the SCP is market prices are not required in the regression model, since market prices may be difficult to acquire. However, a major weakness of the model is it does not permit quantification of the market power, unlike CR_k and HHI. Bikker and Haaf (2002) also criticised the form of the model, where it failed to include new developments in the theory of industrial organisations.

As for the ES hypothesis, Bikker and Haaf (2002) implied that this method was developed to challenge the analysis of the SCP paradigm and intended to offer an opposing view of the relationship between market structure and performance. The

authors further explained that efficiency hypothesis interprets that banks with higher degree of efficiency can reduce the prices without significantly affecting its profitability. The market structure is shaped by the banks' performance resulted from dominance of the top performing banks. Meanwhile, Homma *et al.* (2014) elaborated that the ES hypothesis expects that efficient firms will grow further in terms of market share and profitability due to intense market competition. They further explained that when a market becomes more concentrated, the market tends to be more efficient. They concluded that this approach is the total opposite of SCP whereby SCP envisages that a high concentration market stimulates low degree of competition and leads towards market inefficiency. According to Homma *et al.* (2014) and Bikker and Haaf (2002), among the benefits of the approach are its simplicity, as the model can include multi-product bank into one single figure, the estimation is distribution-free, and efficiency measures are flexible. On the other hand, the drawbacks of the model are price-concentration relationship derived from the estimation of ES hypothesis being vague, and the predictions may be complicated from the usage of profits as a dependent variable due to different levels of firm cost.

3.5.1.2 Non-structural Approach

Molyneux *et al.* (2010) outlined that most of the structural approach methods are based on the new industrial organisation (NIO) theory, where the most vital factor for level of competition is market structure. However, the structural approach disregards the element of strategies or conduct of the individual firm in its models which is considered equally important by many economists. Due to this, economists developed alternative approaches to assess the conduct of firms based on the measure of monopoly and oligopoly market power which should complement market concentration based on a structural approach. The common non-structural measures of competition as per , Bikker and Bos (2008) and Bikker and Haaf (2002) are the Iwata model by Iwata (1974), the Bresnahan model by Bresnahan (1982), and the Panzar-Rosse (PR) approach by Panzar and Rosse (1987).

Iwata model

According to Molyneux *et al.* (2010), this model allows for the estimation of conjectural variation values for individual banks supplying homogeneous products and services in an oligopolistic market. However, this model is rarely used due to a common problem of profitability determinants, which are interrelated and cannot be observed in practice (Bikker and Bos, 2008). Additionally, applying the model in the banking industry framework may not be suitable, where limited or non-existent data for structure of cost and production of standardised products and services across all banks.

Bresnahan model

Bikker and Haaf (2002) explained that the Bresnahan model, which is based on time-series data, treats all banks equally and displays a short-run model determined by market power of average for banks in the market. Bikker and Bos (2008) later described that banks will maximise their profits by equating marginal cost and alleged marginal revenue. Similar to the Iwata model, the Bresnahan model is also occasionally. Claessens and Laeven (2004) implied that the model permits users with simple test statistic and can measure the degree of imperfect competition, which ranges from perfect competition to full market power. Furthermore, another benefit is that the method allows user to use industry aggregate data to estimate the parameter. As for limitations, the method is very data intensive and typically ignores differences in product quality and design across all banks (Bikker and Bos, 2008; Claessens and Laeven, 2004).

Panzar-Rosse (PR) approach

One of the most extensive approaches applied when measuring competition, especially in the banking industry is the PR approach. The method was developed by Panzar and Rosse (1987) for determining the competitive behaviour of banks. It analyses the bank's total revenue as it responds to changing input prices based on cross-section data (Abdul Majid and Sufian, 2007; Al-Karasneh and Fatheldin, 2005; Al-Muharrami, 2009). The PR model is a practical method of measuring the market conditions due to its simplicity and clearness. It faces less constraints for the inputs used for the computation as it is

based on the bank level data *i.e.* revenue that is likely to be observable compared to other output prices that are required for other methods (Brissimis and Delis, 2011). However, one of its limitation is related to the cost structure that is homogenous across all banks in the sample size.

3.5.2 Empirical Papers on Bank Competition

This section review previous studies related to bank competition. As discussed in the previous section, bank competition measurement can be divided into structural and non-structural approaches and among the frequent methods applied in the relevant literature are CR_k, HHI, PR approach, and the Lerner index.

Claessens and Laeven (2004) applied the PR approach in estimating the level of competitiveness of banking systems across 50 countries. They included an unbalanced panel data from 1994 to 2001 with a total of 35,834 bank-year observations. The outcome of their study showed that higher competition in a banking system is caused by the presence of foreign banks, lesser restrictions in the industry, higher concentration level, and a smaller number of banks in the country.

Pawlowska (2005) examined the competition, concentration, and efficiency of the Polish banking sector for the 1997 to 2002 period. The author applied CR_k, HHI, and PR approaches in measuring the competition behaviour, and DEA and Malmquist Productivity Index in assessing efficiency of the banks. The study covered all the banks listed by National Bank of Poland. The results showed that the Polish banking industry operated in a monopolistic competition structure during the period with foreign entry, merger and acquisition exercises, and advancement of information technology among the commercial banks in Poland as factors for improvement of technical efficiency and productivity indices.

As for Al-Muharrami *et al.* (2006), they investigated the market structure and competition conditions of the banking system in the GCC region from 1993 to 2002 from a sample of 484 bank-year observations. The authors employed CR_k, HHI, and PR *H*-statistics to evaluate the concentration and market structure for the respective countries within the GCC. The concentration result described Kuwait, Saudi Arabia,

and UAE have moderately concentrated markets whereas Qatar, Bahrain, and Oman have highly concentrated markets. The overall competition results showed that the GCC region operated under monopolistic competition but as individual countries, the results showed some variations. The PR *H*-statistic suggested that banks in Kuwait, Saudi Arabia, and UAE operated under perfect competition conditions while banks in Bahrain and Qatar operated under monopolistic competition conditions. Again, the authors conclude that the entrance of foreign banks developed some competitive structure with Saudi Arabia and Kuwait the only countries ready for global banking competition.

From the Malaysia perspective, Abdul Majid and Sufian (2007) investigated the market structure and competition of the Islamic banking industry in Malaysia from 2001 to 2005 by looking at 17 domestic and foreign Islamic banks. The study provides a perfect platform for the researcher to compare as this research will also examine the market structure and competition of the same industry in Malaysia but from the years 2008 to 2012. Abdul Majid and Sufian (2007) found that during 2001 to 2005, the Malaysian Islamic banks earned its revenue in monopolistic competition conditions whereby the PR *H*-statistic showed a results ranging from 0.38 to 0.62 for total income equation and between 0.82 and 0.88 for ROA equation.

By using PR *H*-statistic, Schaeck *et al.* (2009) measured competition of banking sectors for 38 countries from 1980 to 2003. They discovered that a higher degree of competition in a banking system may reduce the systemic risk as banks tend to increase their performance in order to survive in more competitive surroundings.

Meanwhile, Casu and Girardone (2009) assessed the competition conditions of five largest European Union (EU) banking markets; France, Germany, Italy, Spain, and UK for the 2000 to 2005 period. They employed structural approach *i.e.* CR_k and HHI, and non-structural approaches of PR *H*-statistic and Lerner index. The results revealed that the selected EU banking markets became more concentrated as a single market but the results of individual countries vary significantly. This showed that even after market integration in the EU, there are still barriers to assimilate into a cross-border retail banking markets.

Simpasa (2013) evaluated the degree of competition in the Zambian banking market after the entrance of new foreign banks and privatisation exercise of the state-owned banks. PR-H statistic and Lerner index were used, which covered from 1998 to 2011 for 18 chartered commercial banks in Zambia. The PR H-statistic and Lerner index results confirmed that the banks in Zambia earned their revenue under monopolistic competition conditions. The author also suggested that penetration of foreign banks and privatisation may increase competitive pressure for the banking industry.

Nguyen and Stewart (2013) examined the concentration and efficiency of 48 commercial banks in the Vietnamese banking sector for the 1999 to 2009 period. They used formal structural approaches of CR_k and HHI and non-formal structural approaches of SCP and ES hypothesis. Based on the analyses, they discovered that the Vietnamese banking sector was less concentrated with big banks performing better than the small and medium-sized banks. The authors also found that their results were the opposite from the results from US and Europe based on the SCP and ES hypothesis.

Another competition study related to the financial sector in Malaysia was performed by Sufian and Shah Habibullah (2013) covering the 1996 to 2008 period with a total of 337 bank-year observations. Unlike the study by Abdul Majid and Sufian (2007), this study excluded every Islamic bank in the country, including merchant banks and finance companies. With the application of PR approach, Sufian and Shah Habibullah (2013) also determined that the Malaysian banking sector is operated under monopolistic competition after the Wald test statistic rejected the monopoly and perfect completion market structure hypotheses.

Hamza and Kachtouli (2014) investigated the competitive condition and market power of Islamic and conventional commercial banks in the MENA and Southeast Asia region between 2004 and 2009. They applied CR_k (in the form of top 3 and top 5) and HHI as per structural approach, and PR H-statistic and Lerner index of non-structural approach. The authors selected 62 Islamic banks and 128 conventional banks from 18 countries. Based on HHI, they discovered that both markets had low concentration but according to CR_k, the Islamic banking market is deemed moderately concentrated. Both the PR H-statistic and Lerner index showed that both markets operated under monopolistic

competition with Islamic banking market possessing a high degree of market power compared to the conventional market.

A recent study related to the Malaysian banking industry was carried out by Mohammed *et al.* (2015) in comparing the Islamic and conventional banking markets. They utilised SCP of the structural approach for conventional banks from 1997 to 2000, while Islamic banks were covered between 2000 and 2010. The results showed that level of concentration lowered over the study period, which indicates a higher degree of competition in the Malaysian dual banking system. They concluded that market concentration and competitive environment are crucial for higher profits and efficiency, promotes stability, and improves market power.

3.6   CONCLUSION

This chapter discussed the theoretical aspects of bank performance with three main methods widely used in research. The approaches are financial methods and ratios, and econometrics and statistical methods as divided into parametric and nonparametric approach. A review of empirical results for each method was included in the later part of the chapter comprising both conventional and Islamic banking related empirical research. The study also takes into consideration relatively large coverage of representative countries to best understand the different approaches to bank performance analysis.

The second section, which deliberated on the theoretical characteristics of competition in an economic market, especially in the banking industry. The section explained the common measurements used to gauge competition and concentration of a market with CR_k, HHI, and PR being the standout options. Similar to the first section, this section ends with a review of empirical studies for various measurements.

The following chapter provides the developments and trends of Islamic banking and finance in Malaysia as well as the competition issues and the outlook of the industry in Malaysia.

Chapter 4

DEVELOPMENTS AND TRENDS IN ISLAMIC BANKING AND FINANCE IN MALAYSIA

4.1 INTRODUCTION

The past decade has seen a fast growing trend in the Islamic finance sector where Muslims and non-Muslims worldwide are able to benefit from the offerings of Islamic banking and finance. In Malaysia, the same pattern has emerged as one of the factors of the overall Malaysian financial system. The trend in Islamic financial development has an enormous impact on the growth and development of the county's economy (Dusuki and Abdullah, 2007). Aziz (2007) mentioned that Malaysia's Islamic financial hub is created based on a comprehensive and progressive Islamic financial system that developed throughout the past three decades.

In pursuance of providing the background of the Islamic banking and finance sector in Malaysia, this chapter begins by discussing the history of Islamic banking and finance in Malaysia. After that, we discuss the growth of Islamic banking and finance from the perspective of the government initiatives. This is followed by a deliberation on the performance of Malaysian Islamic banks. The chapter concludes by examining the future of Islamic banking and finance in Malaysia.

4.2 ISLAMIC BANKING AND FINANCE IN MALAYSIA

The fast changing international Islamic financial environment has allowed Malaysia's Islamic finance sector to become increasingly integrated into the international financial system (Aziz, 2007). According to Aziz (2010), the two factors contributing to the dynamic growth in the Islamic finance sector in Malaysia are the speed of innovation in Islamic finance, which provided various range of financial solutions to parties such as households, business, and government based on the attractive pricing and innovative

structure. Secondly, the flexibility of Islamic finance's inherent features in building the foundation for financial stability.

There are several factors supporting the viability, sustainability, and competitiveness of Islamic finance. For example, the business model of profit sharing based on *Shari'ah* for the investment ventures allows the spread of risk in a more equitable manner. Aziz (2006) highlighted that greater diversification of risks could contribute towards promoting international financial stability. Moreover, the infrastructure of the financial system in Malaysia has also supported the growth of Islamic finance from the available range of Islamic financial instruments and the well-developed Islamic money market (Venardos, 2010). Aziz (2010) emphasised that factors such as regulatory and supervisory regime, legal and *Shari'ah* framework, as well as payment and settlement systems, have contributed to the sustainability of Malaysia's Islamic financial stability.

The impact of the development has affected all segments of the Islamic financial sector in Malaysia that includes the Islamic banking and *takaful* industry and the Islamic money and capital markets. In accordance with this, Malaysia's Islamic financial system consists of highly diversified players. It consists of Islamic banks, investment banks, *takaful* companies, development financial institutions, saving institutions, fund management companies, stockbrokers, and unit trusts. The said players offer a various range of products and services in the market. This abundance of choices has been due to the pace of products innovation for Islamic finance. The market has grown tremendously throughout the years and has become more competitive based on product structure and pricing (Aziz, 2007). This indicates the fast growth and robustness of the Malaysian Islamic financial system.

Moreover, Aziz (2006) underlined that the establishment of the Islamic Financial Services Board (IFSB) has assisted in governing the operations of Islamic financial institutions. Aziz (2006) also informed that despite the harmonisation of standards, IFSB also contributed towards the steady development of Islamic finance in a different jurisdiction. For example, Malaysia implemented the prudential standards issued by IFSB, which take into account the unique features of Islamic finance that would contribute towards ensuring the soundness and stability of the sector.

4.2.1 History of Islamic Banking and Finance in Malaysia

The Islamic banking industry in Malaysia has seen a progressive upward trend since the mid-1980s. The rapid progress at an average of 19% per annum in terms of assets in the industry is due to its significant expansion. On top of that, the rise of development in the Islamic banking and finance environment is important for the changing requirements of a new economy (Abdul Majid and Sufian, 2007).

Malaysia's experience in Islamic finance officially began in 1963 with the establishment of Tabung Haji or the Pilgrims Management and Fund Board by the government. The idea behind the creation of Tabung Haji was from Professor Ungku Aziz (Parker, 2010). The formation of the institution was due to the demand of Malaysian Muslims, who wanted to invest their savings in interest-free base for the purpose of savings funds for performing pilgrim (*Hajj*). Tabung Haji has utilised *mudarabah* (profit and loss sharing), *musharakah* (joint venture), and *ijarah* (leasing) as it modes of financing for investment.

According to Ahmad (1997, p. 36), the primary goals of Tabung Haji at that point in time were:

i. A place for Muslims to save their money to perform pilgrimage (*Hajj*) in Makkah or for other expenditures beneficial to them;

ii. To enable Muslims to participate in investment, industry, commerce and plantations as well as in real estate according to Islamic principles; and

iii. To provide the protection, control and welfare of Muslims during pilgrim through various facilities and services of Tabung Haji.

Since Tabung Haji is a non-bank financial institution, its role has been rather limited. Therefore, the need for a banking institution based on *Shari'ah* principles was expected. With the success of Tabung Haji, Malaysia established a full-fledged Islamic bank known as Bank Islam Malaysia Berhad (BIMB) in 1983. After that, Malaysia has slowly moved towards the establishment of its Islamic financial sector side by side with the conventional system to lead an efficient running dual banking system. According to Mokhtar *et al.* (2006), Malaysia was the first country to implement a dual banking

system in the form of having conventional and Islamic banking sectors operating side by side. It should be noted that many countries showed their interest in adopting Malaysia's experience with a dual banking model.

The government of Malaysia introduced a well-planned systematic strategy based on three phases for the implementation of the Islamic financial system. The first phase was considered the familiarisation period that stretches from 1983 to 1992. BIMB was established during this period together with the introduction of the Islamic banking operations based on *Shari'ah* principles. During the same period, the Islamic Banking Act 1983 (IBA) was officially enacted to govern the activities of Islamic banks in Malaysia. Based on the IBA definition, the Islamic bank is a company that carries out Islamic banking business based on the approved transaction by the religion of Islam (Ahmad, 1997). In ensuring the conduct of Islamic banks is based on *Shari'ah*, the IBA requires the banks to have its own *Shari'ah* Advisory Council, which comprises of experts. In addition, IBA gives BNM the power to supervise and regulate the Islamic banks operation to ensure all transactions follow the *Shari'ah* principles.

The second phase from 1993 to 2003 was the period of creating a conducive competitive environment among the banks as well as to provide time for the banks to capture a larger market share. During this time, awareness was created among the public especially the Muslims by highlighting the benefits of the Islamic banking system. At this point, conventional banks were allowed to offer Islamic banking services via the setting up of 'Islamic windows'. The windows were referred as part of the 'Islamic Banking System (IBS)' in 1993.

The government decided to allow conventional banks to operate using Islamic products and services in its act 1993. The move was based on the consideration that it was the most effective and efficient way to increase the number of players in the said industry. It also consumed the lowest cost and required the shortest timeframe (Mokhtar *et al.*, 2006). As a result, it created a competitive environment within the industry that allows for improved performance and efficiency in the Islamic banking sector (Kaleem, 2000). Despite allowing conventional banks to offer Islamic banking products and services,

Malaysia has established another full-fledged Islamic bank in 1999, known as Bank Muamalat Malaysia Berhad (BMMB).

The final phase commenced from 2004 and is the period of financial liberalisation where the Central Bank opened the opportunity for foreign Islamic banks to operate in Malaysia by issuing them licenses (Kuo, 2010). At the beginning of 2004, three foreign banks were given a full-fledged Islamic bank license. The entities include Kuwait Finance House, Al-Rajhi Banking and Investment Cooperation, and Asian Finance Bank, a consortium led by the Qatar Islamic Bank. More licenses were awarded by BNM in 2008 to Alkhair International Islamic Bank (formerly known as Unicorn International Islamic Bank), PT. Bank Muamalat Indonesia, Deutsche Bank AG International Islamic Bank alongside with Bank of Tokyo-Mitsubishi UFJ Malaysia and CITI Malaysia (via windows), which allow the banks to offer Islamic commercial and investment banking services denominated in foreign currencies (Malaysia International Islamic Financial Centre (MIFC) Official Website). In 2010, BNM further awarded five new licenses to foreign banks BNP Paribas SA, PT Bank Mandiri, National Bank of Abu Dhabi, Mizuho Bank, and Sumitomo-Mitsui Banking Corporation (Samat, 2010).

During the initial stage of Islamic banking in Malaysia, most of the conventional banks took advantage of the 'Islamic windows' in enabling the banks to offer Islamic financial services. The government encourages foreign Islamic banks to enter the Malaysian market with conventional banks and most of the foreign Islamic banks establishing its full-fledged Islamic banks. Table 4.1 presents the list of the current Islamic banks operating in Malaysia.

Table 4.1: Islamic Banks in Malaysia

No.	Bank	Ownership	Inception Date	Type
1	Affin Islamic Bank Berhad	Local	1 April 2006	Islamic subsidiary
2	Alliance Islamic Bank Berhad	Local	1 April 2008	Islamic subsidiary
3	AmIslamic Bank Berhad	Local	1 May 2006	Islamic subsidiary
4	Bank Islam Malaysia Berhad	Local	1 July 1983	Full fledged
5	Bank Muamalat Malaysia Berhad	Local	1 October 1999	Full fledged
6	CIMB Islamic Bank Berhad	Local	1 June 2003	Islamic subsidiary
7	Hong Leong Islamic Bank Berhad	Local	28 March 2005	Islamic subsidiary
8	Maybank Islamic Berhad	Local	1 January 2008	Islamic subsidiary
9	Public Islamic Bank Berhad	Local	1 November 2008	Islamic subsidiary
10	RHB Islamic Bank Berhad	Local	1 March 2005	Islamic subsidiary
11	Alkhair International Islamic Bank	Foreign	2008	International Islamic bank
12	Al Rajhi Banking & Investment Corporation (Malaysia) Berhad	Foreign	1 October 2006	Full fledged
13	Asian Finance Bank Berhad	Foreign	28 November 2005	Full fledged
14	Deutsche Bank AG, IIB	Foreign	2010	International Islamic bank
15	HSBC Amanah Malaysia Berhad	Foreign	1 August 2008	Islamic subsidiary
16	Kuwait Finance House (Malaysia) Berhad	Foreign	1 August 2005	Full fledged
17	OCBC Al-Amin Bank Berhad	Foreign	1 December 2008	Islamic subsidiary
18	PT. Bank Muamalat Indonesia, Tbk	Foreign	2009	International Islamic bank
19	Standard Chartered Saadiq Berhad	Foreign	12 November 2008	Islamic subsidiary

Note: International Islamic banks are allowed to provide Islamic commercial / investment products and services in foreign currencies
Source: BNM and MIFC's websites

4.2.1.1 Interest-Free Banking Scheme

Malaysia adopted a gradual process towards the development of the Islamic banking and financial system, as the success of BIMB signifies and supports the need for the establishment of an Islamic financial system in the country. The development of the Islamic banking in Malaysia began in 1993 with the launch of the interest-free banking

scheme. For the start of the interest-free banking system, Ahmad (1997, p. 48) mentioned that BNM considered the following three alternatives:

(i)   Starting a new Islamic bank based on the BIMB operation model that allows the banks to offer Islamic banking services exclusively;

(ii) Starting Islamic branches of existing banks and financial institutions;

(iii) Allowing commercial banks and financial institutions to offer Islamic banking products through its existing branches and network.

Due to timesaving and cost effective factors, the third alternative was chosen because developing new Islamic banks from the start is considered expensive in terms of resources and time. Similarly, the estimated cost for opening a new branch of an established bank was RM500,000. Moreover, it will require additional time for the administrative procedures and recruitment of new staff to run the branches (Ahmad, 1997). Hence, Malaysia adopted the approach of having both conventional and Islamic banking within a dual banking system rather than replacing the existing banking system.

BIMB was the first bank introduced in the scheme and due to the success of the system; the scheme was further introduced to other banks through several phases. The first phase includes the three largest banks in Malaysia: United Malayan Banking Cooperation, Bank Bumiputera Malaysia, and Malayan Banking Berhad, which were authorised to conduct interest-free banking activities. The next phase included another six more banks, making a total of nine banks participating in the scheme at the end of 1993. The participants for the scheme further grew to 21 banks at the end of 1994. The third phase of the project includes all commercial banks. The success of the interest-free banking system encouraged the non-bank Islamic financial intermediaries such as *takaful* companies and development finance institutions to offer Islamic financial products and services under the Islamic banking scheme.

In ensuring the smooth progression of the interest free banking scheme, financial institutions were required to set up an interest free Islamic Banking Unit (IBU) in their head office for the monitoring and supervision of the IBS. Ahmad (1997, pp. 49-50) summarised some of the IBU functions as follows:

- Attending to all aspects involving the operation of the interest-free banking scheme including policy and procedures;

- Ensuring the proper functioning of the system by liaising with other departments in the financial institutions;

- Ensuring that the available funds used financing and investment activities are based on the Islamic principles;

- Coordinating all the required submissions to be forwarded to Central Bank from time to time;

- Making sure that all directives and guidelines by Central Bank are strictly complied as per the scheme;

- Providing training to staff regarding Islamic banking for the practical implementation of the scheme;

- Providing continuous research and development in Islamic banking towards the enhancement of the Islamic financial system.

The Central Bank also requested the financial institutions that are involved in the interest-free banking scheme to establish and maintain a working fund known as Interest-free Banking Fund (IBF). The main purpose of IBF is to facilitate the expenses for the operation of the interest-free banking scheme.

In 1996, a model financial statement for the interest-free banking system was issued by the Central Bank. The Bank requested all banks to disclose its Islamic banking operations (the balance sheet and profit and loss account) as an additional item in the Notes to Accounts. In the following year, a National *Shari'ah* Advisory Council on Islamic Banking and *Takaful* was setup. Its main objectives are as follows (Venardos, 2006, p. 147):

(i) Acting as the sole authoritative body to advice the Central Bank on Islamic banking and *takaful* operations;

(ii) Coordinating all *Shari'ah* issues regarding Islamic banking and finance (including *takaful*);

(iii) Analysing and evaluating the *Shari'ah* aspect of new products/schemes submitted by the banking institutions and *takaful* companies.

4.2.1.2 Regulation and supervision

The development of any financial system relies on a strong legal and regulatory framework. The current challenging environment that is heightened by risks, has prompted the need for frequent reassessments of existing prudential rules and supervisory approaches between the regulators. This is to ensure the building of a strong regulatory and supervisory framework that will lead towards financial stability in all areas of the financial services sector. The breakthrough in the Islamic financial service industry is seen from the role taken by IFSB in developing prudential, regulatory, and supervisory standards, as well as core principles based on the *Shari'ah* rules (Aziz, 2004). Aziz (2004, p. 1) underlined the three main objectives of the regulatory philosophy for the Islamic banking sectors are as follow:

(i) Formulating a framework based on the unique characteristics of the Islamic banking business. To ensure that it does not put the Islamic financial institutions at a comparative disadvantage compared to the conventional banks that will affect the competitiveness and growth potential in the financial system;

(ii) Evaluating the multi-faceted role performed by the Islamic banking institutions; and

(iii) Developing a level playing approach.

In Malaysia, the enactment of the IBA has required Islamic banks to confirm practices based on prudent banking (Thani and Hussain, 2010). Moreover, based on the IBA requirement, Islamic bank are required to have their own *Shari'ah* Advisory Council (SAC) inclusive of qualified *Shari'ah* experts to ensure that its operations conform to the *Shari'ah*. Meanwhile, the BNM has the power of supervising and regulating Islamic banks as in the case of conventional banks. With the active growth of Islamic banks in Malaysia, the BNM has set-up its own SAC to assist in the monitoring industry practices and standards. The outcome of the implementation of the *Shari'ah* committee pertaining to the financial matters has proved to be successful in regulating Islamic banking businesses based on *Shari'ah* compliance (Venardos, 2006).

According to Venardos (2006), the guidelines regarding Islamic banking issued by the Central Bank can be seen as a legal requirement. The Bank Negara Ordinance specifically mentioned that the Central Bank is vested with some power of regulating the market. One of the guidelines set by the BNM is requesting all conventional banks involved in Islamic banking and Islamic finance to maintain different current accounts and clearing accounts with the BNM. This guideline is to ensure that transactions on these accounts are conducted based on *Shari'ah* law.

In 2009, further regulatory efforts were taken with the objectives to strengthen the *Shari'ah* governance, to encourage sound business practices, and to develop operational efficiencies in Islamic financial institutions (Bank Negara Malaysia, 2010). As a result, the 'rate of return framework' for Islamic banking institutions was revised, which aimed at ensuring that the operational efficiency of Islamic banking institutions can be improved in terms of the management of profit sharing investment accounts. Furthermore, the move was to safeguard that depositors that will receive a fair and equitable portion of the investment profits and to decrease information asymmetries between Islamic banking businesses (Bank Negara Malaysia, 2010).

As a global leader in the Islamic banking and finance industry, BNM took a step further by introducing new legal framework based on *Shari'ah,* Islamic Financial Services Act 2013 (IFSA) (replacing the Islamic Banking Act 1983, Takaful Act 1984, Payment Systems Act 2003, and Exchange Control Act 1953). The new Act introduces more comprehensive regulations and supervision of all activities related to IFIs in promoting financial stability and *Shari'ah* compliant within the industry (Frasier-Nelson, 2014; Thomson Reuters and Islamic Research and Training Institute (IRTI), 2015). According to the *Malaysia Islamic Finance Report 2015* by (Thomson Reuters and Islamic Research and Training Institute (IRTI), 2015), one of the major changes based on IFSA is the reclassification of deposits based on *mudarabah* contract (non-guaranteed) into investment accounts. Meanwhile, (Frasier-Nelson, 2014) considered the consolidation of the old acts into the newly-improved IFSA will ensure the further development of *Shari'ah* compliant regulatory framework and hence uphold the real practice of Islamic banking and finance.

4.2.1.3   Bank Islam Malaysia Berhad

The year 1983 marked a milestone in the Malaysian banking system with the establishment of Bank Islam Malaysia Berhad (BIMB) which provided an alternative to the existing conventional system. Being the first Islamic bank in Malaysia at the time, BIMB enjoyed a monopoly position in the domestic market in relation to Islamic banking (Ahmad, 1997), as it was the sole provider of Islamic financial products for ten years. As BIMB's operation is based on Islamic principles, it has managed to fulfil the requirement of the Muslim population. According to Ariff (1988), BIMB funds in investment have gone into all the main sectors of the economy with 90% of the bank's funds directed at Muslims.

The major shareholder of BIMB was the government of Malaysia with the holding of 30%. Due to the earlier success of Tabung Haji, it has supported the establishment of BIMB by contributing the initial capital of RM80 million (12.5% of the total capital) (Ariff, 1988). Since commencement, BIMB has managed to successfully penetrate the financial market as reflected by the increasing amount of its total assets, loans, and deposits. At the end of 1984 (the first year of operation), BIMB's total assets, financings, and deposits were RM326 million, RM162 million and RM241 million respectively (Haron *et al.*, 1994). As for 2009, the bank's total assets, loans, and deposits were RM24,789 billion, RM10,711 billion and RM25,212 billion respectively (Bank Islam Malaysia Berhad, 2009). One of the contributing factors towards the success of BIMB is the ability of the bank in providing competitive rates of returns to depositors compared to the rates offered by the conventional banks (Ariff, 1988). Furthermore, Ariff (1988, p. 201) stressed the important function of BIMB is the mobilisation of savings and to support this, the bank provides various types of deposits accounts:

(i)   Current account is based on the principles of *al-wadiah* that allows the bank in using the deposited money without having to share the profit with the depositors and in return provides a free current account service to the depositors;

(ii) Savings account is also based on the *al-wadiah* principles, but the bank has the discretion to return a certain portion of the generated profits to the depositors from time to time;

(iii) Investment account are provided based on the *mudarabah* principles. The arrangement enables the bank to use the deposits with profits made to be shared with the depositors based on the agreement while losses (if any) is borne solely by the depositors.

According to Ariff (1988, p. 201), the two types of investment account available are:

(i) General Investment account is based on *mudarabah* principles. This allows depositors to place their funds for a particular period as short as one month to the longest of five years to be invested in the manner deemed fit by the bank. The distribution of profit is based on 70:30 ratio *i.e.* 70% goes to the depositors while the remaining 30% to the banks.

(ii) Special Investment account is deposits received from government and the corporate customers. Profit sharing ratios are negotiable.

Besides the above, project financing is also provided by BIMB based on the concept of *murabahah, bay' bithaman ajil, ijarah*, and *qard al hassan.* Letters of credit and letters of guarantee are also issued by BIMB based on principles of *wakalah, musharakah,* and *murabahah* as well as conducting other banking functions that are discharged against a fee (Ahmad, 1997).

BIMB has contributed towards Malaysia's economic development, particularly for the Muslim community. Its main contribution is through the savings services followed by investments services. Many Muslims in Malaysia preferred to not place their money in the conventional banks due to interest. This phenomenon was more peculiar in the rural areas where sizeable savings were kept out of the system due to lack of *halal* outlets (Ariff, 1988). Thus, the creation of Islamic banks helped to overcome financial exclusion based on religious factors in Malaysia.

4.3 GOVERNMENT INITIATIVES TOWARDS THE GROWTH OF ISLAMIC BANKING AND FINANCE IN MALAYSIA

As Malaysia is looking towards achieving recognition as the capital or hub for international Islamic finance, several steps were taken by the government to achieve this goal. The steps include further liberalisation in the sector by creating more competition, tapping new growth opportunities, and raising the efficiency of Islamic banks as a whole (Abdul Majid and Sufian, 2007). The liberalisation process includes the issuance of the full-fledged Islamic bank licenses by the government to foreign banks from the Middle East. Moreover, in ensuring the stability of the sector, the Central Bank focused on reinforcing the institutional infrastructure. The reinforcements were by enhancing and strengthening the regulatory framework *i.e. Shari'ah* and legal support, as well as intellectual capital development and consumer education (Aziz, 2008).

Besides enhancing the country's Islamic financial infrastructure, the government has taken ongoing efforts in developing the capabilities in Islamic finance. The government aims to strengthen the global pool of talent and expertise in Islamic finance as it is linked towards product innovation and related to the process of market development. As a result, the Malaysian government established the International Centre for Education in Islamic Finance (INCEIF) in 2006. The institution offers professional certification programs in Islamic finance to meet the human capital requirements of the global Islamic financial service industry. It was reported that it has a current enrolment of 1,423 students from 64 countries. With various programmes offered, it has allowed INCEIF to position itself to be the international centre of education excellence in Islamic finance (Bank Negara Malaysia, 2010). Aziz (2008) stated that the Central Bank set up an RM500 million endowment fund to support the INCEIF with the objective of making Malaysia the leading centre for Islamic finance education and developing human capital for the global Islamic finance industry.

In the later part of 2006, other positive steps were taken to grow Islamic finance in Malaysia. The establishment of the Malaysia International Islamic Financial Centre (MIFC) aims to promote Malaysia as a major hub for international Islamic finance. The

MIFC initiative involves the collective support from the country's financial and market regulators as well as the participation of the industry representing banking, *takaful*, and capital markets in Malaysia. Under the MIFC initiative, Malaysia has encouraged financial institutions to use Malaysia as a platform in regards to their Islamic finance activities, leveraging on the comprehensive system and conducive environment for Islamic finance businesses in Malaysia. MIFC's promotion activities include encouraging foreign participation from established financial centres in Europe, Asia, and Middle East to participate in the Malaysian Islamic financial system. The introduction of the long-term brand known as 'Shaping Islamic Finance Together' was created to position Malaysia as an intellectual centre for Islamic financial activities (Bank Negara Malaysia, 2010)

A range of incentives provided by the MIFC initiatives includes providing new licenses for conducting foreign currency businesses, attractive tax incentives, and facilitating immigration policies. With the said incentives, financial institutions will benefit in terms of cost savings, shorter learning curve, and accessing new markets in shorter time.

Thani and Hussain (2010, pp. 96-97) highlighted several achievements of MIFC including:

(i)   Since 2006, the average annual growth in Islamic banking assets is between 18%-20% presently accounting for 15.4% of total banking assets in Malaysia;

(ii) The durable growth in assets and net contributions from the *takaful* and re-*takaful* industry with an average annual growth rate of 19% in 2009;

(iii) The securities listed on Bursa Malaysia based on *Shari'ah* compliant are over 85% representing approximately 60% of the total market capitalisation;

(iv) *Shari'ah* compliant unit trust funds showed a tremendous growth of 84% from 2006 with sales amounting to RM2.96 billion in 2007;

(v)   Malaysia was the first country in the world to provide professional certification for Islamic finance via the Certified Islamic Finance Professional programme.

The attractive MIFC's incentives has allowed Malaysia to gain greater global recognition towards the effort in moulding the Islamic financial industry.

With the priority in human capital development, Malaysia has emphasised catalysing mutual recognition of *Shari'ah* interpretations. The year 2008 marked another milestone in the establishment of the International *Shari'ah* Research Academy (ISRA), whose primary objective is to conduct research on the contemporary Islamic finance based on *Shari'ah* and to provide an active platform for international engagement among *Shari'ah* scholars which focuses on innovation (Venardos, 2010). Likewise, the Central Bank initiated the development of the *Shari'ah* parameters that aim to promote a more consistent application of the Islamic financial contracts deriving from the underlying principal *Shari'ah* contracts. The first *Shari'ah* parameter on *murabahah* was issued in 2009, which enables the Islamic financial institutions in using it as a reference for the development of *murabahah* products and services (Bank Negara Malaysia, 2010). The Central Bank also finalised the *Shari'ah* parameter for the *ijarah, mudarabah, musharakah,* and *wadiah* contracts. Efforts were also made with the proposed establishment of Majma' Kewangan Islam Nusantara (MAKIN), which is an association of *Shari'ah* scholars that promotes shared recognition with regards to the *Shari'ah standards and principles in the ASEAN region* (Bank Negara Malaysia, 2010).

Additionally, the Association of Islamic Banking Institutions Malaysia (AIBIM) has introduced four standardised agreements based on *wakalah* and *murabahah* for interbank and corporate placements. It highlights the main principles of the transactions that assist in eliminating uncertainties and facilitating bilateral negotiations with the players in the sector (Bank Negara Malaysia, 2010). As cited in the report, in response to these agreements, several Islamic financial institutions from Brunei, Indonesia, and the United Kingdom have shown interest by agreeing to adopt the documents for transactions.

In promoting the mutual development of Islamic finance and business linkages globally, the Central Bank under the MIFC's agenda has signed two Memorandum of Understanding (MoU). The agreements were with the United Kingdom Trade and Investment (UKTI) and Hong Kong Monetary Investment Authority (HKMA) in 2009. Both of the MOUs objectives are to promote shared cooperation in the area of Islamic Finance. Mainly towards the development of talent and expertise as well as to promote

and strengthen business linkages and infrastructure support (Bank Negara Malaysia, 2010).

The Financial Stability and Payment Systems Report 2009 by Bank Negara Malaysia (2010, p. 61) identifies some of the highlights of the MOUs:

(i)   In July 2009, the Malaysia-United Kingdom Islamic Finance Forum was held with the aim to foster business interaction in Islamic finance. It also encouraged two-way investments between the United Kingdom (UK) and Malaysia;

(ii) In strengthening the relationship between Malaysia and the United Kingdom, an agreement was executed was between INCEIF and Reading University, the Islamic Banking and Finance Centre (IBFC), Cardiff University Business School, and the Islamic Banking and Finance Institute Malaysia Sdn Bhd. These ties aim at developing talent and expertise in Islamic finance. These arrangements provided a partnership framework in terms of exchanging resources and the development of training programmes both in Malaysia and UK;

(iii) A first working level meeting was held in December 2009 involving the BNM and HKMA. The main purpose of the meeting is to discuss the capacity building and human capital development in Islamic finance.

Meanwhile, to ensure the continuous growth of Islamic finance in Malaysia, the country is continuing to work in partnership with other regulatory authorities. This partnership is to ensure the stability in the IFSB, the Islamic Financial Stability Forum, the initiatives by the Islamic Development Bank, and the newly formed International Islamic Liquidity Management Corporation (IILM) (Aziz, 2010). Aziz (2010) also mentioned that with the increased participation of parties worldwide, it will foster remarkable development of the global financial environment.

4.4   PERFORMANCE OF ISLAMIC BANKS IN MALAYSIA

Since the introduction of the first bank in 1983, Islamic banking in Malaysia has been well accepted where as evidenced by the sector's positive growth performance. The performance as well as its role as an alternative banking for the customers, have indeed been the hallmark for Islamic banking in other Muslim countries.

The Islamic banking system continued to show steady growth performance in 2009, with higher profitability and positive trends in all indicators. The profit before tax for the Islamic banking system amounted to RM2.6 billion posting a growth of 46%. At the end of 2009, Islamic banking activity experienced rapid growth with 19.6% of the total banking assets compared to 17.4% in 2008 (Bank Negara Malaysia, 2010). Figure 4.1 indicates the size and growth of assets, deposits, and financing of Islamic banking in Malaysia between 2006 and 2014. With regards to total assets, deposits mobilised and financing the Islamic banking system, it has registered stable growth since 2006. The Islamic banking system accounted for RM303.3 billion, 19.6% of the total assets of the entire banking system at the end of 2009 and increased to RM625.2 billion (25.6% of total banking assets) in 2014 (Bank Negara Malaysia, 2015).

Figure 4.1: Growth of Islamic Banking System
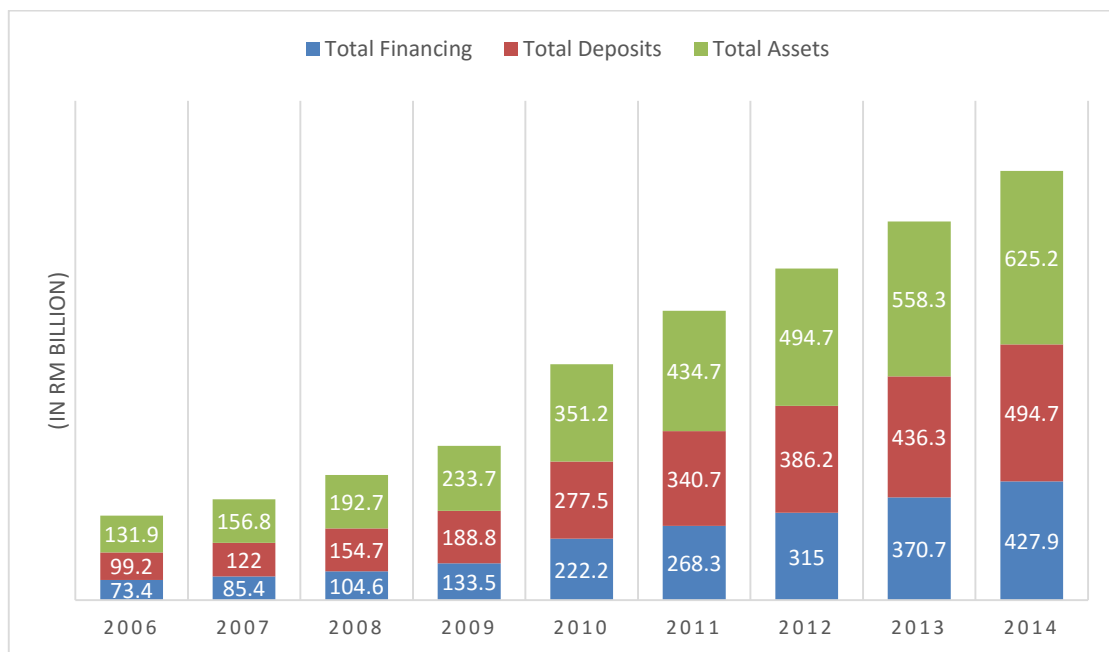
Source: Financial Stability and Payment Systems Report 2014, Bank Negara Malaysia (2015)

As shown in Figure 4.1, there is active growth of both the deposits and financing activities in the Islamic banking system from the year 2006 to 2014. In respect to the financing activities, it accounted for RM73.4 billion in 2006 as compared to RM427.9 billion in 2014 with an average annual growth of 25.5%. Meanwhile, the banking deposits was RM99.2 billion in 2006 (RM154.7 billion in 2008) recording a robust

average annual growth of 22.7% until 2009. As of 2014, the Islamic banking total financing, deposits and assets stands at RM427.9 billion, RM494.7 billion, and RM625.2 billion respectively. With the increased number of players in the Islamic banking sector, it will undoubtedly encourage further growth in the future.

4.5   COMPETITION ISSUES OF ISLAMIC BANKING AND FINANCE IN MALAYSIA

Malaysia's banking sector consists of licensed institutions that include commercial banks, finance companies, merchant banks, discount houses, and money brokers. The institutions are governed under the Banking and Financial Institution Act 1989 (BAFIA) while the Islamic banks are governed by the Islamic Banking Act 1983 (IBA) under the supervision of BNM (Bank Negara Malaysia, 2011). However, 2013 marked another milestone in the Malaysian banking sector with the introduction of the Financial Services Act 2013 (FSA) and IFSA to replace BAFIA and IBA respectively. The new Acts have a wider range of coverage with the inclusion of insurance and *takaful* industries (with the original insurance and takaful acts repealed) (see: Central Bank of Malaysia Official Portal). Apart from the reclassification of products, the introduction of IFSA expects to enhance transparency, innovation of new products, and to enrich risk-sharing approach, which will indirectly increase competition and the robustness of the industry (Thomson Reuters and Islamic Research and Training Institute (IRTI), 2015).

Findings from a study conducted for Islamic banks in Malaysia indicate that the average efficiency of the Islamic banking industry within the 1997 to 2001 period has increased throughout the years. A study conducted based on the financial ratios by Samad and Hassan (1999) found that the Islamic banks are better off compared to conventional banks in terms of liquidity and risk management. It also revealed that the full-fledged Islamic banks were more efficient than the Islamic windows. However, when compared to the conventional banks, the efficiency level of Islamic banking is still lower. This result is supported by Rosly and Bakar (2003). The finding indicates that the average utilisation of fund rates and profits achieved by Bank Islam Malaysia Berhad (BIMB) are found to be lower compared to the conventional banks. Factors supporting the lower

performance by the Islamic banks include the limited investment opportunities in comparison to conventional banks of which the banks are unable to convert the fund to earning assets, as well as the concentration on short term financing that generates less income (Haron, 1996).

The Malaysian banking system changed in the 2000s from a large number of small domestic institutions to a streamline major anchor banking groups. It is said that consolidation through mergers can create further competition between large locally owned firms and foreign-owned firms. Sufian (2004) highlighted that the reduced number of banking institutions in Malaysia through merger exercise will contribute towards achieving economies of scale and a higher level of efficiency. Thus, BNM has played a significant role in encouraging the domestic banking institutions for the said exercise. Upon completion of the mergers in the early 2001, the local banking institutions reduced to ten anchor banks. This move is supported by the findings conducted by Abdul Majid and Sufian (2006) towards the Malaysian banking industry that indicated that the competition level was higher between the year 2002 and 2005 compared to 1998 to 2001. Abdul Majid and Sufian (2006) also suggested that the effect of the merger exercise has given the major banks the ability to gain higher profits based on its unique features and market strategy. The effect of merger exercise allows higher banking concentration which enables higher profits to be earned in the banking market in leveraging loans and deposits interest rate (Sufian, 2004).

Banks in Malaysia was dependent on Base Lending Rate (BLR) that was set by BNM in determining their rate charges to its financing products. However, since January 2015, the structure was replaced with a new Base Rate (BR) system, which is now set by individual banks based on a formula set by BNM. Each bank's BR mostly refer the BR with its cost of funds. Since BR of each banks are pretty close with each other (between 3%-4%), price and rate will not be a major decision for customers. The nature of competition for Islamic banks in Malaysia revolve around services, technology, the brand, and the efficiency of respective banks, which is determined by how they can reduce cost and waste (Abd Kadir *et al.*, 2014). However, the demand of up-to-date products and services especially from the urban and religious sensitive population, has promoted intense competition among Islamic banks in Malaysia. With the advancement

of technology and the Internet, banks in the country have been more competitive in offering products and services (Abd Kadir *et al.*, 2014). As a result, the banks have introduced great number of products and services, which are available online either via Internet banking, or mobile banking.

In facing the era of globalisation, the banking industry's environment has changed in which competitiveness is achieved by enhancing operational efficiency and being creative towards the innovation of competitively priced financial products. According to Bikker and Bos (2005), the two major factors contributing towards the performance and financial health of the financial institutions are competition in the banking market and efficiency of the banks, which is supported by most empirical findings that indicate that efficiency gains are secured through competition (Mokhtar *et al.*, 2008). In fact, arguments were raised on the basis that a higher competition level in the banking sector will simultaneously have an effect towards the efficiency level. The impacts are in terms of fund allocation and general operating as an intermediary between lenders and borrowers (Abdul Majid and Sufian, 2007). Additionally, Mohammed *et al.* (2015) claimed that competition landscape among banks in Malaysia has changed due to rationalisation, liberalisation, and globalisation processes initiated by BNM. Furthermore, the improvement and upgrading of Islamic banking Information and Communications Technology (ICT) system has accelerated the nature of competition among Islamic banks in the country.

Meanwhile, a subsequent study on the same area concluded that due to the suboptimal scale of operations, the full-fledged Islamic banks have underperformed the Islamic windows (Sufian, 2009). Sufian (2009) also discovered that larger banks tend to be less efficient. The result is inconsistent with previous studies. Therefore, the author suggests that the full-fledged Islamic banks are to reduce their size to be more efficient.

One reason to support the lower efficiency level is the time factor. Islamic banks have been in the market for less than two decades compared to conventional banks that have existed in the market for hundreds of years (Mokhtar *et al.*, 2008). With the conventional bank being in the market for an extended period, these banks have been able to obtain cheaper funds. These advantages are reflected in its average deposits,

overhead expenses, and earning of assets. In fact, the average prices of labour and physical capital of the conventional banks are higher than the Islamic banks that summarised that conventional banks are investing more in human resources and technology. With the time span of existence, conventional banks benefited from the larger market size, the long-term experience, as well as financial deepening factors (Rosly and Bakar, 2003).

It is said that in a competitive environment, banks are required to operate efficiently by providing products and services demanded by the customers to ensure its viability (Mokhtar *et al.*, 2008). For the competition level in the banking industry, many previous studies applied the PR *H*-statistic, which overall indicated varying empirical results. Abdul Majid and Sufian (2007) concluded that the Malaysian Islamic financial sector is categorised under monopolistic competition, and the degree of competition has been increasing throughout the years. This finding is in line with Bikker and Spierdijk (2008) which pointed out that the competition level in the banking industry for the emerging markets has increased for the past few years. However, with the opening entry of foreign banks in the banking sector, it will undoubtedly create a competitive environment for the banks. Also, competition among the conventional banks is expected to intensify in the future due to globalisation (Mokhtar *et al.*, 2008).

Despite ensuring the competitive environment in the banking sector, the BNM also plays a significant role towards spearheading developments in the banking sector. Aziz (2004) commented that the initiatives taken by the BNM will help encourage innovation and competition as well as maintain the stability of the Malaysia banking sector.

4.6   MOVING FORWARD AND THE FUTURE OF ISLAMIC BANKING AND FINANCE IN MALAYSIA

Due to growing global awareness, Islamic finance has made a sound foundation and is growing rapidly in the international market. According to Aziz (2010), as of 2010, Islamic finance has a presence in over 60 countries with assets under management of Islamic banks and conventional banks offering Islamic banking services approaching USD1 trillion. Based on the *World Islamic Banking Competitiveness Report 2013-2014* by Ernst & Young (2013), the total of global Islamic banking assets was USD1.54

trillion and 1.7 trillion in 2012 and 2013 respectively across 75 countries. As forecasted by Venardos (2010), future growth is anticipated for the Islamic finance sector and there is a tendency for the industry to move towards the financial mainstream. The high number of players and the establishment of new Islamic banks will undoubtedly encourage further growth by competing with conventional banking. This expected growth is linked with previous findings that indicate that Islamic banks have the capability to sustain its viability and progression in the competitive financial environment (Rosly and Bakar, 2003).

With the focus on ensuring the financial system to remain sound and resilient, it will help towards facing the future risks and challenges while supporting the economic growth of the country (Bank Negara Malaysia, 2010).

Based on the objective of contributing towards greater international financial and economic integration, Malaysia will take continuous steps to strengthen its international linkages in the global Islamic financial system through collaborative partnerships and cooperation with related parties. Currently, Malaysia has the most comprehensive and systematic Islamic financial market in the world, which consists of Islamic banking, Islamic development finance institutions, non-banking financial institutions, *takaful* operators, Islamic money market, and Islamic capital market (Smolo and Habibovic, 2012).

However, Smolo and Habibovic (2012) explained that Islamic banking and finance in Malaysia need to overcome several obstacles to improve further. Among the barriers are a lack of efficient legal frameworks and standard procedures, and lack of standardisation of interpretations of Islamic principles (especially with the Middle East). It is vital to pass these hurdles to move forward and become a significant option to the conventional financial system at the international level.

4.7   CONCLUSION

This chapter assessed the development and trends of Islamic banking and finance in Malaysia together with reviews on competition and the outlook of the industry in Malaysia. Based on the review, the merger exercise implemented by BNM has

positively influenced the banking industry. With controlled players in the industry, it has created a competitive environment between the financial institutions. The competition level within the sector has indicated a positive change. An earlier study conducted by Abdul Majid and Sufian (2007) has summarised that Malaysia's market structure is categorised under monopolistic competition, and the level of competition has grown over the years. Moreover, the public acceptance of Islamic banking products has supported the growth of the banking sector. It is foreseen that the competition level will intensify further with the initiative taken by BNM by encouraging innovation and competition as well as maintaining the stability of the Malaysia banking sector.

The following chapter explains the methodology and modelling of the research including the data collection and data analysis procedures, and research limitations and difficulties.

Chapter 5

RESEARCH METHODOLOGY AND MODELLING

5.1   INTRODUCTION

It is vital that the research methodology be appropriate for the research question and should minimise opportunities of biases towards the data collection and analysis as well as the conclusions derived based on the outcomes of the study. While no research methodology is faultless, this chapter explains and justifies the research techniques applied.

In this chapter, the first section discusses the definition of research methodology and the types of research typically used for the research purposes. Sections two and three identify the type of research design and method employed in the research together with its reasoning. Section four addresses the data collection process, while the final section explains the data analysis techniques considered for the purpose of the study.

5.2   RESEARCH METHODOLOGY

According to Saunders *et al.* (2009), research involves the process of collecting, analysing, and interpreting information to answer relevant questions about further knowledge. In conducting research, research questions are formed to link the purpose of the research. A research methodology is the framework linked with a set of assumptions that is used in conducting the research (Bryman and Bell, 2003). Therefore, research methodology is related to the steps taken toward answering the research questions (Kumar, 1999).

With the aim to achieve the desired result, it is essential to decide on the suitable strategy and format for conducting the research. There are several approaches and formats that could be considered in the research design. The two major types of research approaches are known as qualitative and quantitative research. Both research methods

have their differences in terms of data collection and analysis and hence, have their strengths and weaknesses.

The quantitative research approach underlines the quantification in the collection and analysis of data, which uses the deductive approach in testing the relationship between theory and research (Bryman and Bell, 2003). Quantitative research is typically used to explain the reasons why things happen in a particular manner. The analysis of the findings is based on statistical procedures implying that the results from the findings are more analytical in nature. For example, the conclusions deduced from the study are based on the strength of the relationship between variables. Saunders *et al.* (2009) highlighted that quantitative research places reliance upon the research instruments for the purpose of data gathering as well as measuring it, which overall provides clear illustrations and concise representation.

However, quantitative research is not without criticism. For example, it is claimed that the findings from the research are limited. As the findings for the quantitative findings are based on numerical descriptions rather than narrative explanation, it provides less elaboration towards the human perception (Bryman and Bell, 2003). In the case of quantitative data collected through questionnaires, the answers given by the respondents do not reflect the exact feeling towards a particular subject and in some cases it will be the closest match. In addition, accuracy of the measurement process is also an issue. In other words, the standard questions prepared by the researchers may lead to 'structural' bias and false representation, wherein the data reflects the views of the researcher rather than the participating subject.

As for qualitative research, it is usually more concerned with words rather than numbers as explorations are related to experience, perceptions, feelings, and meanings (Bryman and Bell, 2003; Kumar, 1999). This type of research is mostly based on an inductive approach in exploring the relationship between theory and data in the field where the emphasis is more on the generation of theories rather than testing the theories (Bryman and Bell, 2003). Flick (2007) summarised that qualitative research uses text as empirical material, which begins with the notion of the social construction under study that is interested in the perspectives from the point of participants in daily practices and

common knowledge on the subject of the research. Due to its characteristics, the findings from the research tend to be more descriptive and narrative in nature.

Several critics of qualitative research have argued that qualitative research is too subjective and is related to findings that are based on the researcher's unsystematic views on what is significant and important (Bryman and Bell, 2003). This is supported by the research process where it usually begins with relatively open-ended and entails gradually narrowing down towards the research questions. Secondly, the problem of generalisation is an important issue, as qualitative research is frequently based on a limited number or sample size. Hence, the findings of the research are restricted and therefore it is hard to know how the findings can be generalised to other settings. Thirdly, it is claimed that the process of qualitative research is unclear (Bryman and Bell, 2003), as it is not obvious as to how the analysis is conducted and, therefore, how the conclusions will be derived from the study.

In this study, the quantitative methodology is pursued in responding to the aims and objectives of the study, as it involves the collection of secondary data related to empirical materials with regards to the financial performance of the Islamic banks.

5.3 RESEARCH DESIGN

Research design provides the researcher a plan for the collection and analysis of data. A choice of research design reflects decisions about the priority being given to a range of dimensions of the research process (Bryman and Bell, 2003). These include the importance attached to explaining the causal relationship between variables and generalising to larger groups of individuals than those forming part of the investigation. It must also consider the behaviour and the meaning of that behaviour in its particular social context and having a temporal appreciation of social phenomena and their interconnections.

Depending on the aims and objectives of the research, research design can be divided into the following three categories:

Exploratory studies

Exploratory research is conducted to classify the nature of the problems by finding out, "what is happening, to seek new insights, to ask questions and to assess phenomena in a new angle" (Saunders *et al.*, 2009). It is undertaken when little information is available about the situation or no available information on how similar problems or research issues were solved in the past. It is not intended to provide conclusive existence from which a particular course of action can be determined. Exploratory research crystallises the problem and identifies information needed where subsequent research is usually required. Therefore, it provides a better understanding of the nature of the problem for the research purposes as well as providing knowledge through subsequent theory building.

One of the advantages of this design is that it provides flexibility to the researcher and adaptability to change. However, it is argued that the flexibility does not indicate the lack of direction to the enquiry for the purpose of the research (Saunders *et al.*, 2009).

Explanatory studies attempt to identify the cause and effect relationships between variables. It usually follows exploratory and descriptive research and, therefore, the researchers are expected to be knowledgeable about the subject.

Descriptive studies are conducted to discover and determine the characteristics of a population by answering the questions 'who, whom, where and how'. The goal of the study is to provide the researcher a profile or to describe certain aspects of the phenomenon of interest. The study is usually an extension of the findings from the exploratory and explanatory research. Saunders *et al.* (2009) highlighted the necessity of having a clear picture of the phenomena on which the researcher wishes to collect prior to the collection of data.

Based on the research aims and objectives of a particular research, several research strategies can be used. The choice of a research strategy is usually based on the research questions and objectives, the extent of existing knowledge, the amount of time and availability of resources.

The *survey approach* is a common procedure used to answer the question 'who, what, where and how much', which applies to exploratory and descriptive studies. Surveys are used as it allows the collection of large amounts of data from a sizeable population in a highly economic way. Administered questionnaires are usually used as it is easy to explain and understand as well as provides an easy comparison for the findings and analysis. It is suggested that the survey strategy provides possible reasons for particular relationships between variables and to produce models of this relationship (Saunders *et al.*, 2009).

Second, to gain an in-depth understanding of the context of the research, a *case study strategy* is more relevant. In fact, one of the strengths of a case study is being able to provide a variety of evidence that is beyond what is available in the conventional historical study (Yin, 2009). This strategy is applicable and often used in explanatory and exploratory studies. Saunders *et al.* (2009) argued that using a case study approach may enable the researcher to challenge the existing theory as well as provide a source of new research questions. The data collection technique for a case study can be in various manners and is likely used in a combination such as interviews, observation, and questionnaires. However, Yin (1994) suggested that this method faces criticism as an argument has been raised that the small number of cases prevents the generalisation of the findings. This verdict concludes that the strategy was only useful in exploring the phenomenon to a particular case.

This research, accordingly, is based on a descriptive and explanatory design, which uses the case study strategy to examine and explain the performance of Islamic banks. The said procedure is applied because of the social enquiry that allows further investigation and understanding of the particular concept, namely bank performance with the secondary data to establish certain relations, correlations, and causalities. Yin (1994) and Saunders *et al.* (2009) pointed out that the case study allows empirical investigation of a particular phenomenon based on a real context using multiple sources of evidence.

5.4   RESEARCH METHOD

A research method is a technique used for data collection and data analysis. Based on the research method categories, the two broad categories used by researchers are:

Quantitative method is often used if the research is explanatory, descriptive, or evaluative. Saunders *et al.* (2009) summarised that the quantitative method is related to any data collection technique or data analysis procedure (such as graphs and statistics) that generates or uses numerical data. The quantitative method allows the research to state the research problem in very specific terms, and analysis is based on the identification of the dependent and independent variables. This method is normally based on hypothesis testing and determining the issues of causality that, as a result, allows the research to arrive towards a more objective conclusion. However, the method does not encourage the continuous investigation of the research phenomenon.

Qualitative method is based on any data collection technique or data analysis based on non-numerical data (Saunders *et al.*, 2009), which is often used for exploration purposes. This method allows the research flexibility in performing data collection, analysis, and interpretation on the outcome of the findings (Flick, 2007). Hence, it provides the researcher a holistic view of the research investigation. As highlighted by Flick (2007), the qualitative method is more or less based on a vague concept. This may create difficulty in explaining the difference in the information obtained as it is collected in different ways that could lead to non-consistent conclusions.

Having mentioned these two research methods, it should be noted that Bryman and Bell (2003) explained the concept of triangulation related to the usage of more than one approach for the investigation of research questions. Jack and Raturi (2006) underlined that the concept of triangulation is based on complementary methods where the assumption that the weakness of one approach will counter-balance through the strength of another approach. Triangulation is usually associated with quantitative research, but is sometimes used in qualitative and mixed research designs. Within this context, quantitative and qualitative research is perceived as different ways of answering the research questions. However, in combining both methods, it provides the process for cross-checking findings that results in valid conclusions that enhance the mutual confirmation of the research (Bryman, 1988).

Bryman (1988) explained four types of triangulation:

(i) *Data triangulation*, which refers to data collection based on several sampling strategies;

(ii) *Investigator triangulation*, which refers to the usage of the several researcher for the process of gathering and interpreting data;

(iii) *Theoretical triangulation* includes using several theoretical positions for data interpretation;

(iv) *Methodological triangulation* refers to the usage of more than one method to data gathering.

As for the rational of using triangulation, its completeness highlights the using of a single method will have inherent flaws, and, therefore, will impact on the conclusions of the research. The second rationale is a contingency that is based on the need of how and why a particular strategy is chosen. The last rationale is confirmation. Triangulation improves the overall ability of researchers in drawing conclusions that might result in a more robust and generalisable set of findings. Moreover, combining a multiple methods and data collection will help overcome the intrinsic biases arising from a single method (Jack and Raturi, 2006).

Despite the positive feedback of triangulation in checking the validity of the findings of the research, some criticisms were raised. Bryman (1988) explains that triangulation assumes that the data obtained from different research method could be ambiguously compared and regarded in addressing the research questions. Hence, it fails to view the various circumstances associated with different research methods.

For this study, a quantitative method is adopted as the research is related to the financial performance of the Islamic banks through an explanatory research based on statistical data provided by the concerned banks. The findings from the study aim to facilitate the interpretation of relationships between variables in the quantitative data set that will further provide information and understanding of the research problems. This method intends to determine or define the problem more precisely, identify a relevant course of action, and gain additional insight before any measures and recommendations can be developed. Therefore, it is relevant to this study.

5.5   DATA COLLECTION

For data collection purposes, researchers have the option to collect from either primary or secondary sources. Primary data is collected specifically for the research being undertaken through questionnaires and surveys while secondary data is based on data used in the study collected for other purposes such as statistical data. One of the main differences between the two types of data is cost and time to collect (Saunders *et al.*, 2009). Primary data usually takes more time and is expensive compared to secondary data, as the latter is cheaper and more timely, because collection were done previously and expenses were borne at an earlier period. In fact, the relevance of the data will determine the selection of the suitable data collection method. For example, primary data is collected for a specific purpose based on the research questions and objectives, while secondary data may have been collected earlier for different uses.

As the study is focussed on the significance and performance of Islamic banking and the development of the industry, secondary data is used as the data collection method. Secondary data is extracted from the existing published and unpublished material that is used extensively in the literature review to provide the framework for this study.

Data collection is a time-consuming process and using the secondary data for analysis will enable the researcher to save its resources, particularly cost and time (Ghauri and Gronhaug, 2010). It is, therefore, less expensive to use secondary data compared to collecting data anew. Moreover, it allows the researcher to have more time to analyse and interpret the available data. Secondary data also offers the prospects for the researcher in having access to good quality data as the data have already been collected which provides an unobtrusive measure. Moreover, the source of secondary data is both permanent and available. This is relatively easy for others to check and hence, the data for the research findings are more open to public scrutiny (Saunders *et al.*, 2009). In fact, re-analysing secondary data enables the researcher to explore unforeseen or unexpected new discoveries that can be used for comparison purposes.

Despite the advantages of secondary data, it has its shortcomings as well. Since it is based on the available data set, it might not meet the researcher's needs and provide inadequate information. Zikmund (2000) highlighted that the common problems of

secondary data are outdated information, the difference in the definition of terms, different units of measurements, and lack of information to validate the data's accuracy. However, the data can still be used by the researcher for measuring the correct amount of information through analysing and ensuring the collection of such data is useful and valid (Zikmund, 2000).

It should be noted that the research question determines the selection of data. Accordingly, the types of secondary data used in for the study are listed below:

(i)   Annual Reports and other related reports

Financial data from the Islamic banks are collected from respective banks' annual reports and Bank Negara Malaysia reports. Data from the said reports are used to calculate the bank performance indicators based on profitability and efficiency that are used for comparison purposes. For this, primary data providers such as Bankscope and IBIS Online will also be referred to.

(ii)   Books, magazines, and articles

Any books or articles on issues related to this research were used to provide more in-depth information related to the study, which supplied additional data and useful information for the researcher.

The business journals provide the foundation and basic overview of the study and information on the research topic. They also provide the understanding of the significance of Islamic banking and the development of the industry and other areas related to the topic of the research.

5.5.1 Sample Type, Selection, and Period

According to Sekaran (2003), sampling involves the process of the selection of individual observations that subsequently provides the researcher with data and consequently enables statistical inference. The generalisability of the research findings will disclose the level of attention on how the data is represented based on the collected sample. Hence, it is paramount to ensure that the research obtained a sufficient sample size for represent the population of which generalisations are made.

Sekaran (2003) explains that the population is defined as a group of people that generates the researcher's interest for investigation. Therefore, the first step in the sampling process is to define the target population that includes information on the sampling elements, units, and the area of coverage (Ghauri and Gronhaug, 2010). Normally, the whole population is not used for research purposes as Saunders *et al.* (2009) suggested. Using a representative number of people or data set from the population will result in a more efficient response that saves time and cost.

This study involves both local and foreign owned Islamic banks in Malaysia. Malaysia is chosen as the target population, as it is the leading Islamic financial centre supported with the progression and attractiveness in the sector that has been given various incentives with further liberation planned in the future.

In conducting the research, the sample selection is an important step that affects the response rate. The process of sampling includes any procedure using a small number of items or parts of the whole population towards deriving a conclusion pertaining to the entire population. For the purpose of the research, the selection of the sample is based on all Islamic banks in Malaysia. This will provide the overall view of the industry for more accurate judgments.

With respect to the sampling design, there are two categories known as probability and non-probability sampling. Probability sampling is selected using a random selection of each unit in the population with equal chance of being selected from the population, which is usually associated with survey-based research strategies. The researcher is required to make inferences from the sample about a population in answering the research question or meeting the research objectives (Saunders *et al.*, 2009). Meanwhile, non-probability sampling is based on a sample that is not been selected using a random selection method where there is no equal chance of being selected from the population (Sekaran and Bougie, 2009). Saunders *et al.* (2009) emphasised that this sampling method provides the researcher a range of alternative techniques in selecting samples that are based on the researcher's subjective judgment. The sample size for non-probability sampling is ambiguous. However, there should be a logical relationship between the sample selection technique and the purpose of the research.

For the purpose of this study, non-probability sampling of purposive sampling is used. This enables the researcher to use his judgment when selecting cases that best enable answering the research questions and meet the objectives (Saunders *et al.*, 2009). Although this sampling method is restricted to generalisability, it is the best sampling design choice for a limited population that could provide the required information (Sekaran and Bougie, 2009). This sampling method is suitable for a small population as Malaysian Islamic banking industry. According to Table 4.1, there are currently 19 Islamic banks in the country. However, the three recently established banks are considered international Islamic banks and allowed by BNM to offer products and services in foreign currencies. Due to this reason and availability of data, Alkhair International Islamic Bank, Deutsche Bank AG, IIB, and PT. Bank Muamalat Indonesia, TBK are excluded from the research. EONCAP Islamic bank is also excluded from the sample, after their successful merger with Hong Leong Islamic in 2011. Therefore, all 16 banks that met the requirements are included in the study in order to avoid any bias. It should be noted that the period covered in the estimation of the ratios determined by the availability of data, which is determined by the year the bank was established. Therefore, in order to get the maximum number of observation, the period of 2005 to 2012 is selected as purposive sampling suggests.

The finalised banks included in the research are:

(i)   Affin Islamic Bank Berhad
(ii)   Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
(iii)   Alliance Islamic Bank Berhad
(iv)   AmIslamic Bank Berhad
(v)   Asian Finance Bank
(vi)   Bank Islam Malaysia Berhad
(vii)   Bank Muamalat Malaysia Berhad
(viii) CIMB Islamic Bank Berhad
(ix)   Hong Leong Islamic Bank Berhad
(x)   HSBC Amanah Malaysia Berhad
(xi)   Kuwait Finance House (Malaysia) Berhad
(xii)   Maybank Islamic Bank Berhad
(xiii) OCBC Al-Amin Bank Berhad
(xiv)   Public Islamic Bank Berhad
(xv)   RHB Islamic Bank Berhad
(xvi)   Standard Chartered Saadiq Berhad

5.6 DATA ANALYSIS PROCEDURES: IDENTIFYING VARIABLES AND PROCESS

Data analysis is conducted to produce information that will assist the researcher in addressing the research problems. Based on the available data set, all data are gathered and transferred to a data sheet using software known as DEAP version 2.1 for analysis. The data is analysed based on bank performance. As for competition analysis, the researcher uses Microsoft Excel 2013 and EViews version 8.

5.6.1 Bank Performance Analysis

For this research, financial data of the Islamic banks spanning from 2005 until 2012 are collected from the respective banks annual report, BNM report, and data from Bankscope of which the bank's performance is evaluated based on profitability and efficiency. In terms of profitability, the data will be analysed by the selected ratios. As for efficiency, the same data will be analysed using the DEA and Malmquist Productivity Index.

5.6.1.1 Profitability

The comparison between all Malaysian Islamic banks is conducted using Sabi's bank performance indicators (Sabi, 1996). According to Samad and Hassan (1999) who have used Sabi's method, the performance of banks is best to be measured by comparing every bank with each other. Financial ratios to be used in the study to assess the performance of the sampled banks can be grouped into profitability ratios, liquidity ratios, risk and solvency ratios, and commitment to the economy and Muslim community.

(i) Profitability ratios

The profitability of the banks is estimated based on the following computation:

Return on Asset (ROA) = Profit after tax / total asset

ROA indicates how the bank converts its asset into earnings where a higher ratio is an indicator of better performance.

Return on Equity (ROE) = Profit after tax / equity capital

ROE is the net earnings per dollar equity capital, where a higher ratio is an indicator of higher managerial performance.

Profit Expense Ratio (PER) = Profit after tax / total expense.

A higher PER ratio signifies that a bank is cost efficient and makes a higher profit with the given expense.

Liquidity Ratios

The liquidity of the banks is computed based on the following:

Cash Deposit Ratio (CDR) = Cash / deposit

Cash is the most liquid asset for banks. Hence, a comparison between banks having higher and lower CDR indicates the liquidity of the banks among each other. A higher CDR will enable banks to build trust among its depositors.

Loan Deposit Ratio (LDR) = Loan / deposit

A bank will be in financial stress if excessive loans are made which consequently leads to a high LDR. Therefore, a lower LDR is preferable compared to a higher LDR.

Current Ratio (CR) = Current assets / current liability

CR signifies how the bank's ability to pay back its short-term liabilities with its short-term assets. A higher ratio indicates that the bank has a more liquid asset to pay back its obligations.

Current Asset Ratio (CAR) = Current assets / total assets

A higher CAR shows that the bank has more liquid assets. A lower rate is a sign of illiquidity as more of the assets are long-term in nature.

(ii)   Risk and Solvency Ratios

Risk and solvency of the sampled Islamic banks is computed by the following ratios or variables:

Debt Equity Ratio (D/E) = *Debt / equity capital*

D/E suggests the proportion of equity and debt of the bank that is used to finance its assets. A lower D/E is a good indication of bank performance.

Debt-to-total-assets Ratio (DTAR) = *Debt / total asset*

The ratio denotes the bank's financial strength in paying its debtors. A high DTAR is a sign showing that the bank is involved in risky business.

Equity multiplier (EM) = *Total assets / share capital*

EM implies the amount of assets per dollar of equity capital. A high EM value provides a greater risk to the bank as it shows that the bank has an additional fund in converting the assets using the share capital.

Loan to deposit ratio (LDR) = *Total loans (financings) / total deposits*

LDR measures the bank's liquidity and credit risk. A high value indicates a potential source of illiquidity and insolvency.

(iii)   Commitment to Community and Islamic Community

The following variables or ratios are used to compute the selected banks' performance in relation to their commitment for community and Islamic community.

Long-term Loan ratio (LTA) = *Long-term financings / total financings*

The LTA explains the bank's commitment to supporting its long-term development project.

***Government Bond Investment (GBD)** = Deposit invested in government bond / total deposits.*

The computation of the ratio provides details of the bank's liquidity and risk.

***Mudarabah-Musharakah ratio (MM/L)** = (Mudarabah + Musharakah) / Total loans*

The ratio signifies the commitment of the bank towards the community development where a higher percentage is preferable.

5.6.1.2   Efficiency

Previous research has developed several approaches to inform the development of efficiency measures (Mostafa, 2007). The efficiency performance of the banks is analysed based on the Stochastic Frontier Approach (SFA) (parametric) and Data Envelopment Analysis (DEA) (nonparametric). SFA is the econometric method that measures the performance through benchmarking in various economic input-output systems. The method of analysis will enable the researcher to explain the gap between the current performance and best performance of the banks. However, it was pointed out by Hasan (2005) that the function form and distribution assumptions for the SFA are based on data prior to estimation.

As for DEA, it is a technique based on the computation of comparative ratio of outputs and inputs for each unit related to efficiency score. DEA is a technique that has no fixed structure imposed on the data in determining the efficient units leading to minimal specification error. The key feature of the DEA is related to the bank's efficiency that can be assessed based on other observed performance. Despite the advantages, one of the disadvantages of DEA is that it assumes data to be free from measurement error (Avkiran, 1999). If the data is violated, the results from the findings could not be interpreted with confidence. Similar to other analysis that relies on dependable data, DEA is particularly sensitive to unreliable data. The units deemed efficient in determining the efficient frontier have an effect on the efficient scores computed under the frontier. Coelli *et al.* (2005) suggested to use a distance functions similar (extension) to DEA *i.e.* Malmquist Total Factor Productivity (TFP) Index in measuring technical efficiency change and technical change elements. This method is suitable in describing

multi-input and multi-output functions, which are closely related to the banking sector. Coelli *et al.* (2005) further explained that the index measures the productivity change between two data points by calculating ratios of a particular value (increase/decrease rate) between two periods.

The application of the SFA and DEA techniques is divided into two stages. The first stage involves the estimation of efficiency and inefficiency scores based on the objectives of the research. The scores computed based on the efficiency level could be rank to indicate the banks relative performance. The next stage involves exploring the causal relationship between the inefficiency estimates against other relevant variables such as firm and location of the firm. Hasan (2005) argues that the frontier approach could be applied in any field of inquiry where variables yield to management.

For this study, only DEA and the Malmquist Productivity Index will be used to analyse the efficiency. DEA and the Malmquist Productivity Index are selected due to their flexibility, applicable for multi-input and multi-output variables, and extensive use in various researches, especially in developing countries like Malaysia (Anouze, 2015; Denizer *et al.*, 2000; Johnes *et al.*, 2014; Kamaruddin *et al.*, 2008; Keskin and Degirmen, 2013; Matthews and Ismail, 2006; Mayer and Zelenyuk, 2014; Mokhtar *et al.*, 2008; Srairi *et al.*, 2015; Zeb, 2015).

Further information about DEA and the Malmquist Productivity Index will be discussed in Chapter 7.

5.6.2 Competition Analysis

As regards to the analysis pertaining to competition between the banks, the bank concentration ratio (CR_k) and Herfindahl-Hirschman Index (HHI) are utilised to determine the structure and concentration of the Malaysian Islamic banking market. For further analysis, the Panzar-Rosse (PR) model is also used to develop the competition indicator that will establish the measurable assessment of the competitive nature of the market. This will provide an indication of whether the Malaysian Islamic banking market is in a monopoly, monopolistic competition, or perfect competition market. The selection of CR_k, HHI, and PR approach are made due to the fact that these methods

are reliable, easy to use and understand, proven, and vastly applied in various banking markets (Al-Muharrami, 2008, 2009; Al-Muharrami *et al.*, 2006; Casu and Girardone, 2009; Molyneux *et al.*, 2010; Nguyen and Stewart, 2013; Pawlowska, 2005; Simpasa, 2013; Sufian and Shah Habibullah, 2013).

As mentioned earlier, the two most commonly-used methods in measuring industry concentration in a banking sector are CR_k and HHI (Bikker and Haaf, 2002; Young and McAuley, 1994). According to Molyneux *et al.* (2010, p. 3), the concentration measures based on CR_k and HHI, "aim to reflect the implications of the number and size distribution of firms in the industry for the nature of competition, using a relatively simple numerical indicators". Bikker (2004) explained that factors such as easy-to-use and limited data requirements cause the CR_k to be one of the most frequently used in measuring concentration in banking industry. The CR_k is derived from the ratio of market share owned by the largest k banks in the industry, where *k* is a specified number of banks, often by looking at top four of the largest companies, or sometimes in a smaller or larger number (Young and McAuley, 1994). Case *et al.* (2009) described HHI as an index of market concentration derived by calculating the sum of the squares of market shares for each firm within the industry. Bikker (2004) considered HHI as one to the widely used measurements of concentration in theoretical literature and serves as a standard in evaluating concentration in various industries, including banking.

Meanwhile, the PR approach is based on the fact that each bank will employ different pricing strategies in response to the market changes towards input costs that depend on the bank's market structure (Panzar and Rosse, 1987). Thus, whether the bank operates in a competitive market or exercises some monopoly power can be inferred from the analysis based on the bank's revenue based on the responds towards the change in the input prices. The measurement of the competitive structure of the industry is based on *H*-statistic. It measures the percentage change in a bank's equilibrium revenues caused by one percent change in all the bank's input prices (Panzar and Rosse, 1987). The advantage of using the PR model is that it does not require output price and quantity data that is unavailable or costly to obtain. The model enables the incorporation of bank-specific factors in the production function by using the firm-level data. The model also

examines the banks based on different characteristics such as type, size, and ownership (Yildirim and Phillippatos, 2007).

As mentioned above, the PR model computes the elasticity of revenue with respect to input prices. One of the disadvantages of the said method is the computation at times provides only a one-tail test of competition based on its assumption of a single product firm. For example, the rejection of monopoly power is reliable but the rejection of competitive conduct is not (Shaffer, 2004). In addition, Shaffer (2004) underlined the concern of the econometric identification applied in the PR model. With a horizontal long run industry supply curve in the competitive industry, a firm's reduced-form revenue is not affected by the shifts in the market demand (Panzar and Rosse, 1987). The shift is unnecessary for the market demand estimation or instruments applied in the empirical model.

The technical and mathematical aspects of CR_k, HHI and PR H-statistic will be further discussed in Chapter 8.

5.7   LIMITATIONS AND DIFFICULTIES

The major difficulty when conducting this research is the limited scope of the analysis, as the scope of the study mainly focusses on the performance of the Islamic banks in Malaysia and its efficiency against each other. The efficiency results of the study cannot be directly compared with other efficiency results in other studies on the nature of the outcome of the test that only confined within the same sample only. Hence, it is inappropriate to compare the efficiency results in this study against any other studies that are available regardless of time or geographical factors.

As for the availability of data, the first Islamic bank in Malaysia was founded in 1983, and it took another 16 years for the second full-fledged Islamic bank to be established. However, most of the Islamic banks in the country, either foreign or subsidiary of conventional banks, started their operations in 2005 until 2008. Due to this, the available data for comparison for most of the banks can only be conducted from 2005 onwards, which limits the period in question.

5.8 CONCLUSION

This chapter explained the methodology and modelling of the research including the justification for models selected; DEA and Malmquist Productivity Index for efficiency analyses, and CR_k, HHI and PR approach for competition and concentration analyses. The chapter also clarified the data collection and data analysis procedures and ends with the research limitations and difficulties.

The following chapter is the first of the three empirical chapters, which features the descriptive results of 16 selected Islamic banks in Malaysia based on selected ratios.

Chapter 6

DESCRIPTIVE EMPIRICAL RESULTS ON BANK PERFORMANCE IN MALAYSIA: DOMESTIC VS. FOREIGN ISLAMIC BANKS

6.1 INTRODUCTION

This chapter examines the performance of domestic and foreign Islamic banks in Malaysia from 2005 until the2012 financial year by employing the financial ratios described in Chapters 3 and 5. These ratios include the following:

- (i)   Return On Assets (ROA)
- (ii)   Return on Equity (ROE)
- (iii)   Profit Expense Ratio (PER)
- (iv)   Cash Deposit Ratio (CDR)
- (v)   Loan Deposit Ratio (LDR)
- (vi)   Current Ratio (CR)
- (vii)   Current Asset Ratio (CAR)
- (viii) Debt Equity Ratio (D/E)
- (ix)   Debt to Total Asset Ratio (DTAR)
- (x)   Equity Multiplier (EM)
- (xi)   Long-term Loan Ratio (LTA)
- (xii)   Government Bond Investment (GBD)
- (xiii) *Mudarabah-Musharakah* Ratio (MM/L)

The methodology followed in this chapter is based on three different analyses. In the first section, individual banks are descriptively analysed through the determined financial ratios, which is conducted mainly by presenting the estimated ratios through depictions in figures. In the second part, in order to provide a comparison, each financial ratio is presented for all selected banks in one table. The third section shows a comparison between domestic and foreign Islamic banks by presenting the estimated financial ratios.

It should be noted that the period covered in the estimation of the ratios determined by the availability of data, is determined by the year the bank was established. Considering that most of the banks have been in the Malaysian market for only a few years, the analysis in most of the cases is limited to observations not exceeding seven years.

6.2 THE FINANCIAL PERFORMANCE OF INDIVIDUAL BANKS

In this section, the individual financial ratios for each bank is discussed and analysed. The analysis in this section includes the following banks:

- (i)   Affin Islamic Bank Berhad
- (ii)   Al Rajhi Banking & Investment Corporation (Malaysia) Berhad
- (iii)   Alliance Islamic Bank Berhad
- (iv)   AmIslamic Bank Berhad
- (v)   Asian Finance Bank
- (vi)   Bank Islam Malaysia Berhad
- (vii)   Bank Muamalat Malaysia Berhad
- (viii) CIMB Islamic Bank Berhad
- (ix)   Hong Leong Islamic Bank Berhad
- (x)   HSBC Amanah Malaysia Berhad
- (xi)   Kuwait Finance House (Malaysia) Berhad
- (xii)   Maybank Islamic Bank Berhad
- (xiii) OCBC Al-Amin Bank Berhad
- (xiv)   Public Islamic Bank Berhad
- (xv)   RHB Islamic Bank Berhad
- (xvi)   Standard Chartered Saadiq Berhad

6.2.1 Affin Islamic Bank Berhad (AFFINISLAMIC)

Profitability ratios:

Figure 6.1: AFFINISLAMIC's Return on Assets (ROA)
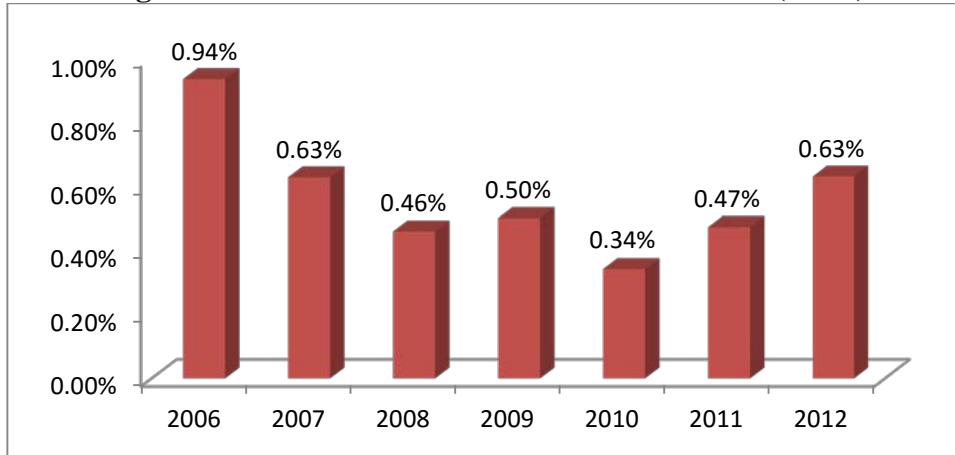
AFFINISLAMIC's ROA in Figure 6.1 shows a decreasing trend from the point the bank started operation in 2006 but picked up from 2010 to 2012. In 2006, the ROA stood at 0.94% but declined to 0.63% in the following year and was at its lowest point in 2010 with 0.34%. As of 2012, the ROA for the bank was at 0.63%. The ratio indicates that the bank earned RM0.06 for each RM1 in assets.

Figure 6.2: AFFINISLAMIC's Return on Equity (ROE)
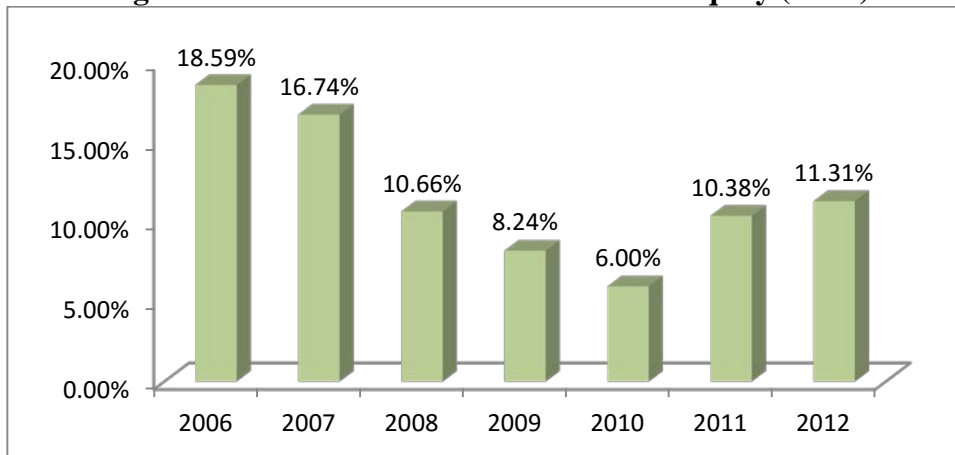
As can be seen in Figure 6.2, similar to ROA, the bank's ROE showed a diminishing pattern with 18.59% in 2006 and 16.74% in 2007 but elevated starting 2011. The bank generated less rate of return to capital in 2008 with 10.66% and further reduced to

6.00% in 2010. The main reason for the decrease was due to the yearly increase in the business's equity and paired with a decline in net income.

Figure 6.3: AFFINISLAMIC's Profit Expense Ratio (PER)
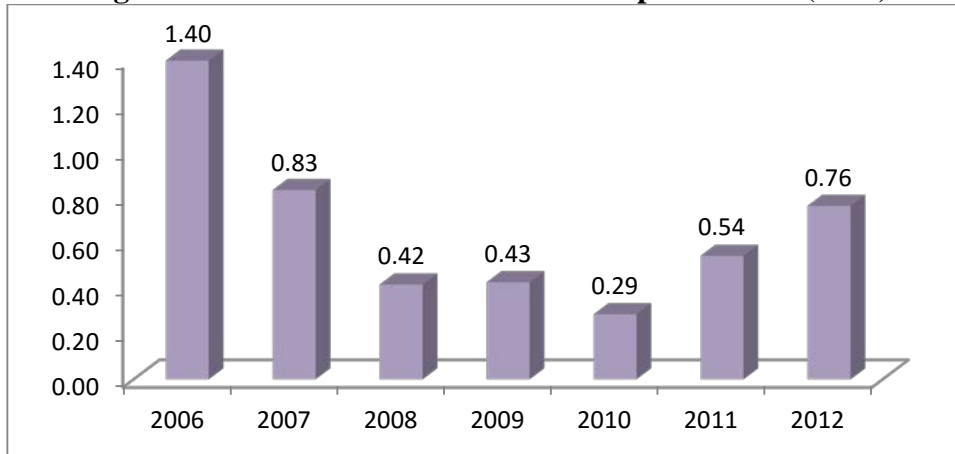
Figure 6.3 exhibits that the bank can generate more profit with given expenses in 2006 with 1.40 but slumped to 0.83 in 2007, further dropped to 0.42 in 2008 and was at its lowest point in 2010 at 0.29. The bank's PER has improved in 2009 with 0.54 then increased further to 0.76 in 2012.

Liquidity ratios:

Figure 6.4: AFFINISLAMIC's Cash Deposit Ratio (CDR)
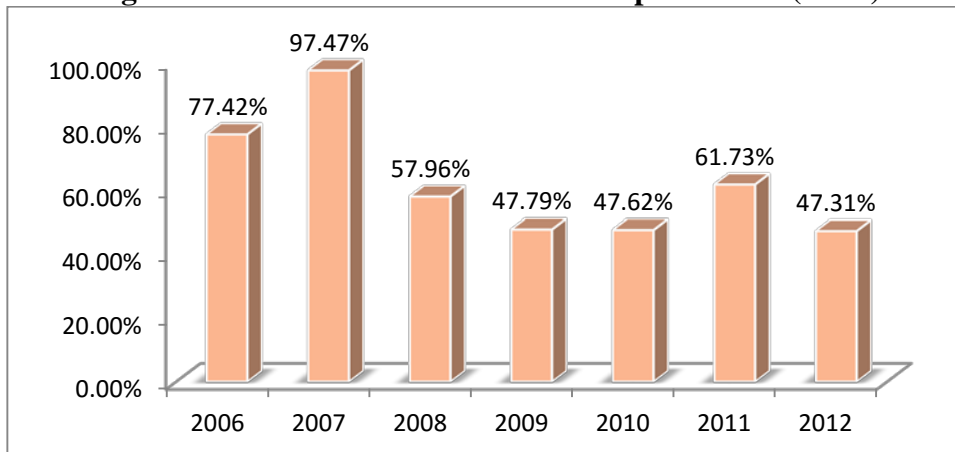
As depicted in Figure 6.4, AFFINISLAMIC maintained a high cash to deposit ratio in the early establishment of the bank with 77.42% in 2006 and increased to 97.47% in 2007. However, the ratio plunged to almost half with 57.96% in 2008 and further

decreased to 48% mark in 2009 and 2010. The bank increased the rate in 2011 to 61.73% but reduced back to 47.31% in 2012.

Figure 6.5: AFFINISLAMIC's Loan Deposit Ratio (LDR)
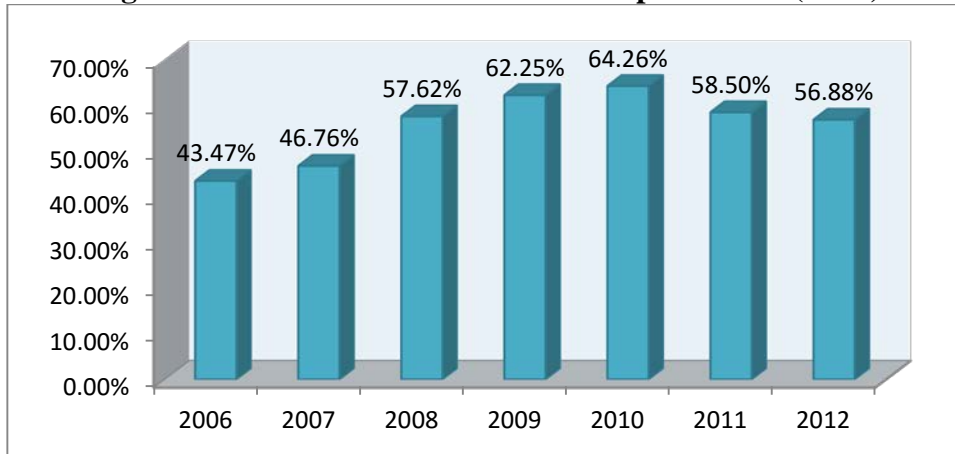
In terms of LDR, Figure 6.5 shows that the bank started with 43.47% in 2006 and 46.76% in 2007, while in the following year, the bank became less liquid with LDR of 57.62%, which increased further to 62.25% and 64.26% in 2009 and 2010 respectively. The bank maintained around 57% LDR in 2012.

Figure 6.6: AFFINISLAMIC's Current Ratio (CR)
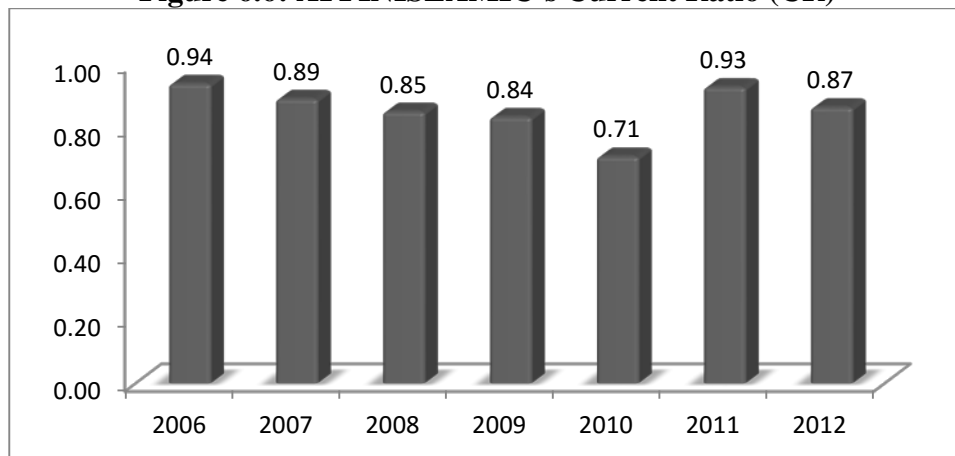
As can be seen in Figure 6.6, the bank's CR shows a slight deteriorating pattern with the ratio recorded at 0.94 in 2006. There was a minor drop for the next four years with 0.89, 0.85, 0.84 and 0.71 in 2007, 2008, 2009 and 2010 respectively. The ratio increased to 0.93 in 2011 and slightly reduced to 0.87 in 2012. Overall, the bank may struggle to fulfil its short-term obligations on time.

Figure 6.7: AFFINISLAMIC's Current Assets Ratio (CAR)
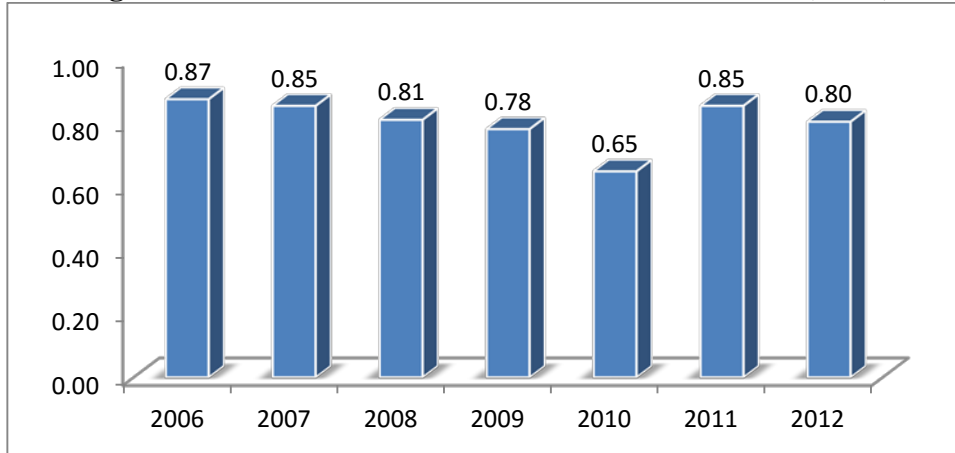
Based on the CAR ratio estimation, the trend in Figure 6.7 shows that the bank maintains lesser liquid assets each year from 2006 to 2010. In 2006, the ratio was at 0.87 and had a minor fall to 0.85 in the following year. The ratio further declined to 0.81 in 2008 and finally to 0.65 in 2010. The latest CAR for this bank was recorded at 0.80 in 2012.

Risk and solvency ratios

Figure 6.8: AFFINISLAMIC's Debt-to-Equity Ratio (D/E)
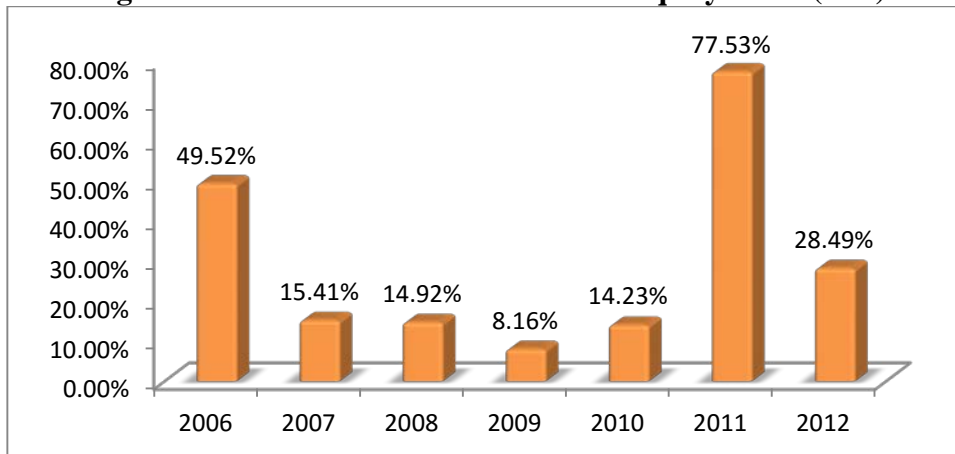
The result from Figure 6.8 presents the bank's weak capabilities in absorbing impact from financial implication with a high D/E recorded in 2006 with 49.52%. The ratio showed some improvement in the following year with 15.41%. In 2009, there was a sign of progress with a further drop to 8.16%. However, in 2011, the D/E for Affin Islamic was at its highest with 77.53%.

Figure 6.9: AFFINISLAMIC's Debt-to-Assets Ratio (DTAR)
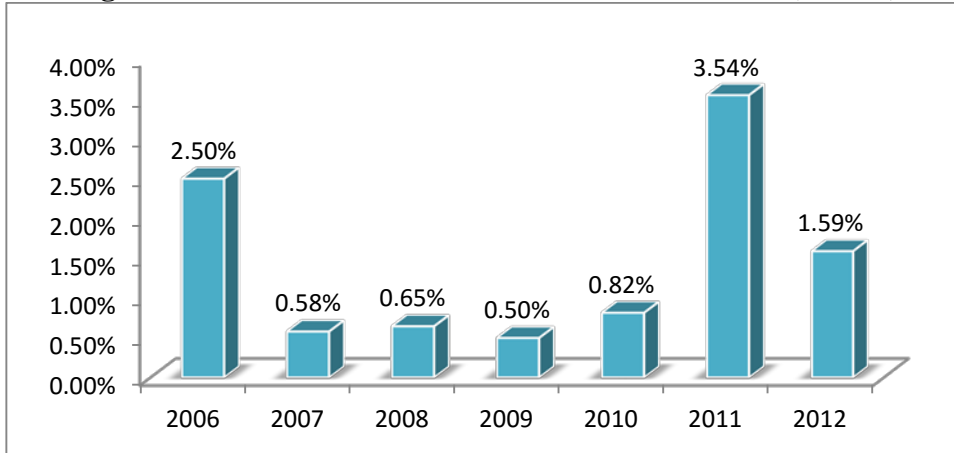
As for DTAR, the bank shows a consistent trend between 2007 and 2010 with their ratio recorded below 1%. The highest ratio was registered in 2011 with 3.54%, a high DTAR reflects the amount of debt to finance its assets.

Figure 6.10: AFFINISLAMIC's Equity Multiplier (EM)
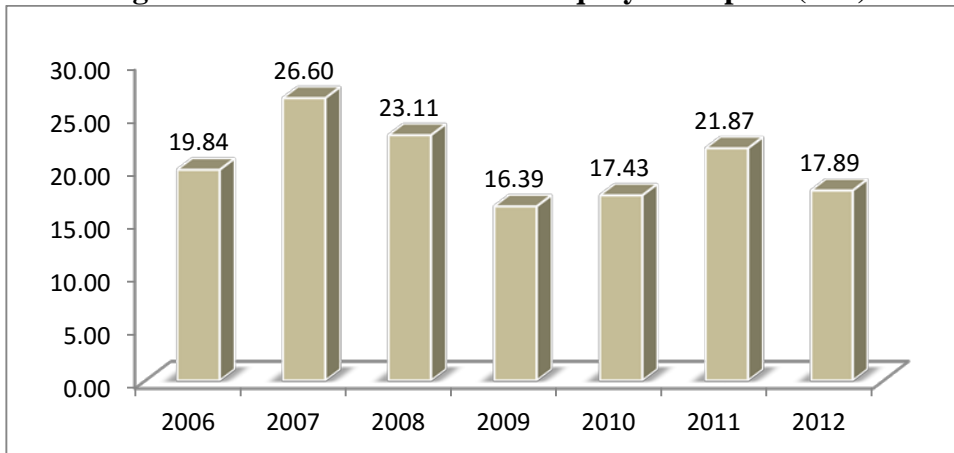
Based on Figure 6.10, the bank's EM indicates that the bank relied heavily on debt to finance its assets with 19.84 in 2006 and a jump to 26.6 in 2007. The ratio stood at 17.4, 21.9 and 17.9 in 2010, 2011 and 2012 respectively.

Commitment to economy and Muslim community ratios

Figure 6.11: AFFINISLAMIC's Long-term Loan Ratio (LTA)
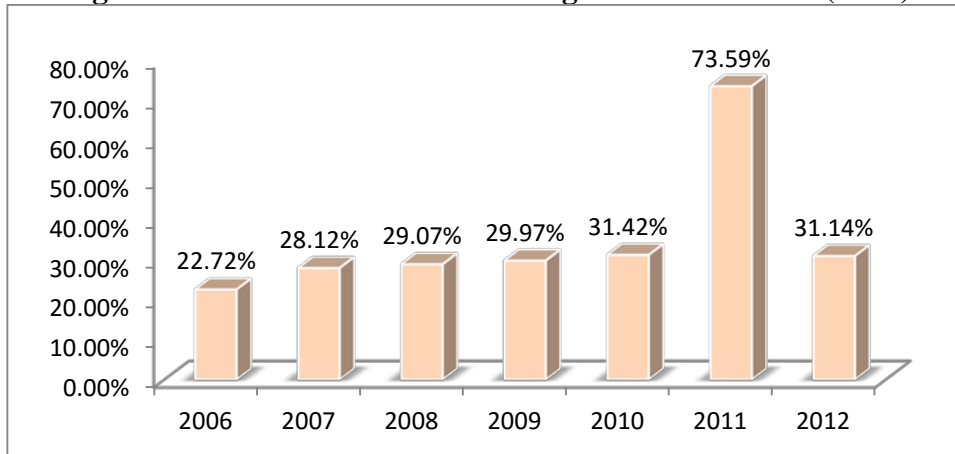
As can be seen in Figure 6.11, the bank shows consistent growth from 2006 to 2010 in terms of its dedication to finance the long-term project with 23% in 2006 and 2010 revealed that the bank financed 31% of the overall loan. The increasing trend denotes a positive support by the bank towards the Islamic banking sector. The LTA spiked dramatically in 2011 with 73.59% and reduced back to its normal rate of 31.14% in 2012.

Figure 6.12: AFFINISLAMIC's Government Bond Investment (GBD)
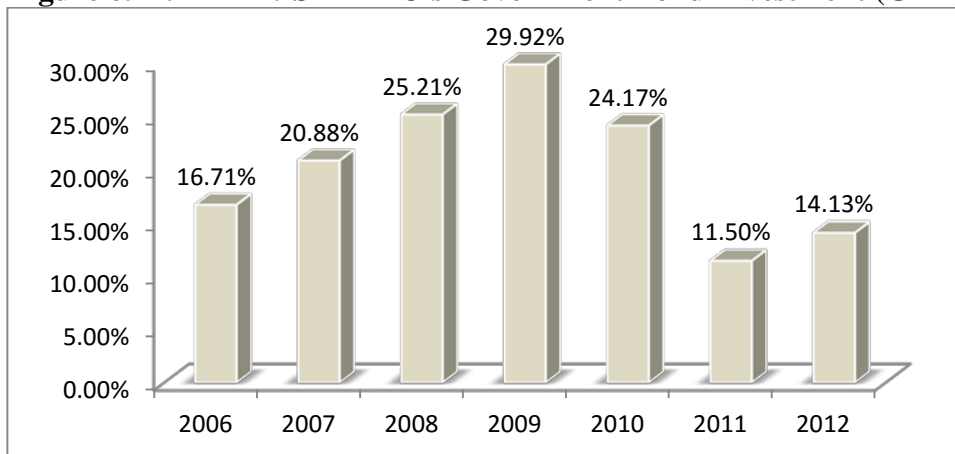
As the trends in Figure 6.12 show, the bank's investment in Malaysian government bonds using the customers' deposits displays a steady increment with 16.7% in 2006, 20.9% in 2007, 25.2% in 2008 and 29.9% in 2009. However, the figure exhibits a

decreasing pattern since 2010 with 24.2% and 11.50% and 14.13% in 2011 and 2012 respectively.

Figure 6.13: AFFINISLAMIC's *Mudarabah-Musharakah* Ratio (MM/L)
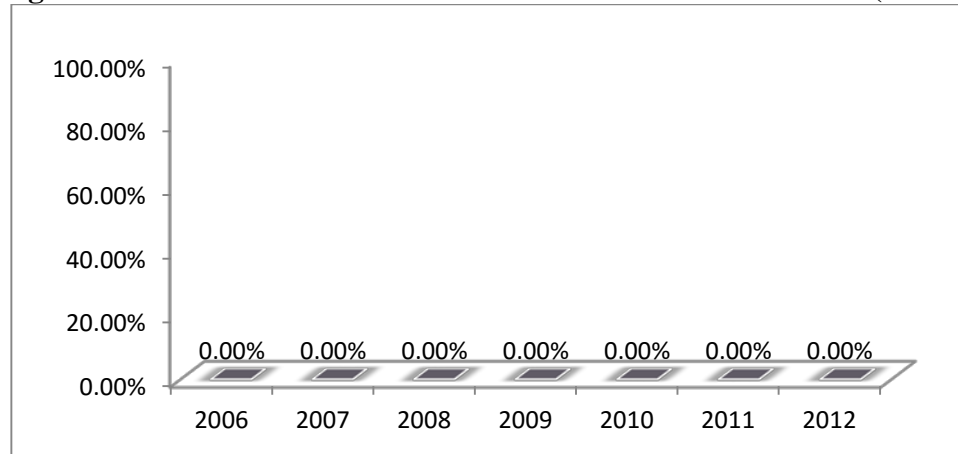
As regards to the MM/L ratio, as can be seen in Figure 6.13, AFFINISLAMIC bank never recorded any *mudarabah* and *musharakah* transaction since its inception in 2006 until the end of the 2012 financial year.

General Reflections on the Financial Performance of Affin Islamic Bank

Based on the seven years of operation for AFFINISLAMIC, it was observed that the profit generated in 2006 has contributed towards the strong performance of the bank. However, for the following years, the slight drop in the bank's financial results affected the bank's performance by indicating a declining trend identified in the profitability ratios. The reason for the downward trend is due to the impact of the global economic conditions and further competition within the banking sector. Meanwhile, in terms of liquidity, AFFINISLAMIC started with a steady growth in 2006. However, it faced a downward trend in the consecutive years with the exception for CDR and LDR, which initially indicated an upward trend but eventually suffered a declining trend in the following years of operation. For the risk and solvency ratios, it was observed that the bank had an upward movement for the initial two years of operation and subsequently faced a downward movement in the following years. The bank managed to progress well towards its contribution to the community and Islamic community by showing a progressive upward trend each year.

6.2.2. Al Rajhi Banking & Investment Corporation (Malaysia) Berhad (Al Rajhi)

Profitability ratios

Figure 6.14: Al Rajhi's Return on Assets (ROA)
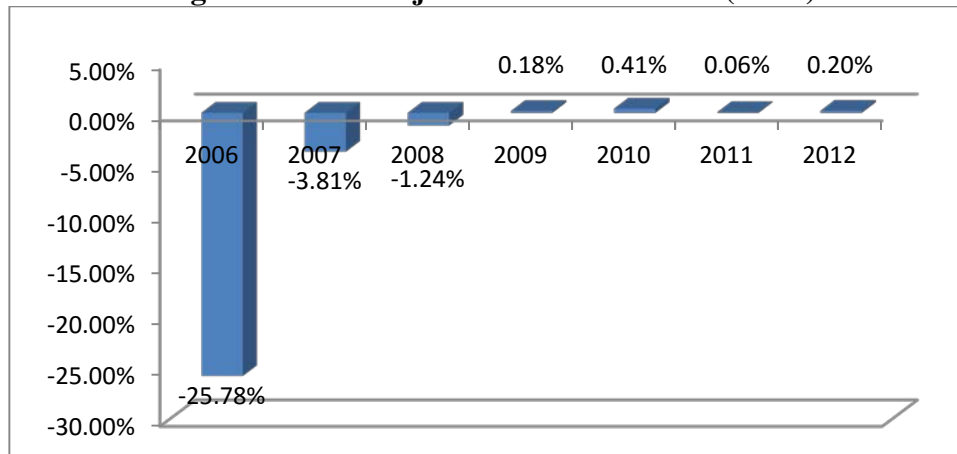
As can be seen in Figure 6.14, Al Rajhi recorded -25.78% of ROA in the opening year of their operation in Malaysia. However, the ratio picked up later in 2007 and 2008 with -3.81% and -1.24% respectively. In 2009, the ratio was on the positive side of 0.18% and further improved to 0.41% in 2010. The initial setback in ROA is contributed from the losses made by the bank during the first three years of operation in the country.

Figure 6.15: Al Rajhi's Return on Equity (ROE)
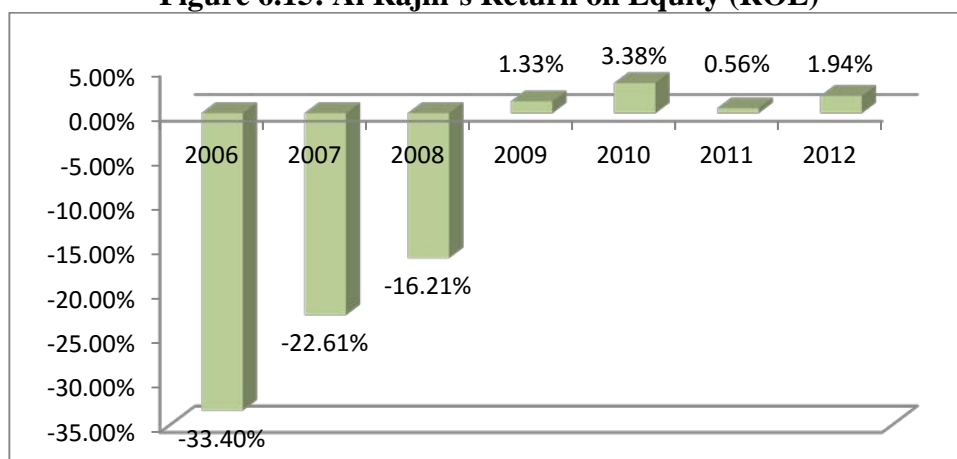
Due to the losses incurred in the initial years of operation, the bank's ROE also recorded a similar trend as ROA, which is evidenced in the trend observed in Figure 6.15. The ROE for the bank showed negative figures for the first three years of operation with -

33.40%, -22.61%, and -16.21% for the year 2006, 2007 and 2008 respectively. In 2009 and 2010, the ROE improved to 1.33% and 3.26% respectively. Latest ROE was recorded at 1.94% in 2012.

Figure 6.16: Al Rajhi's Profit Expense Ratio (PER)
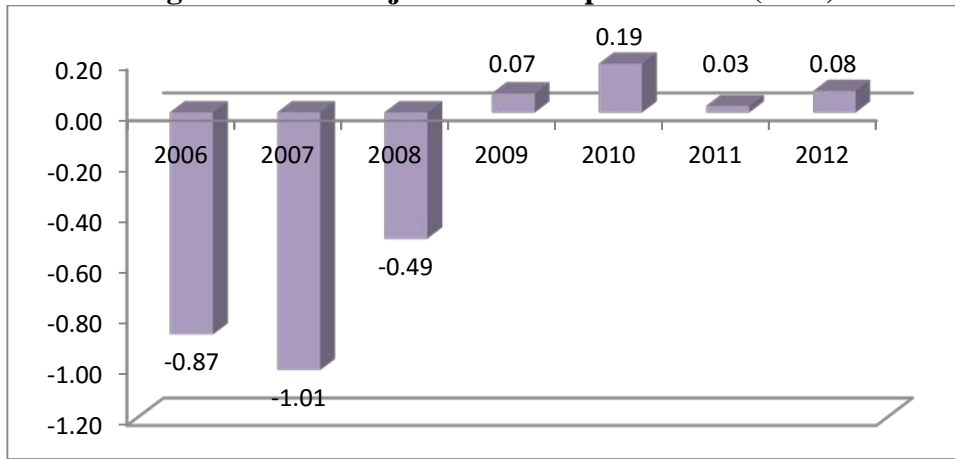
According to Figure 6.16, the net losses that the bank suffered from 2006 to 2008 did have an impact on the bank's profitability ratios with the worst PER recorded during 2007 at -1.01. The bank's PER increased to 0.07 in 2009 and 0.19 in 2010.

Liquidity ratios

Figure 6.17 Al Rajhi's Cash Deposit Ratio (CDR)
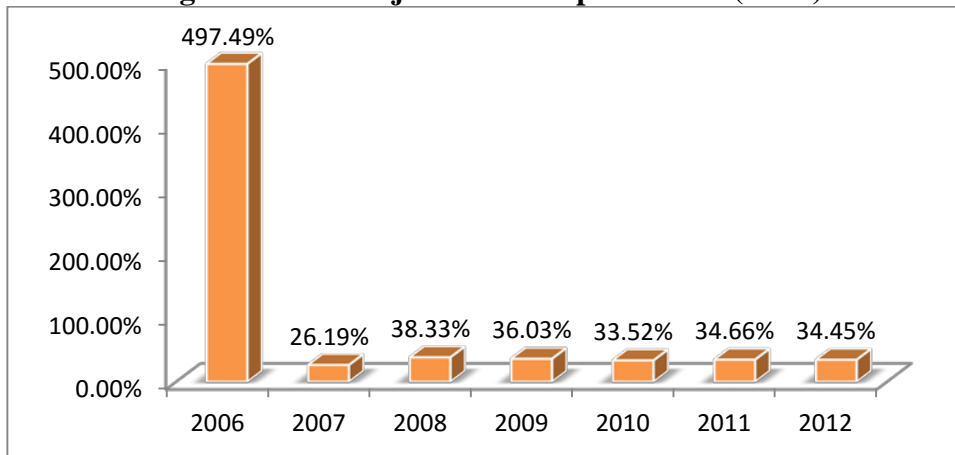
As depicted in Figure 6.17, during the first year of operation, Al Rajhi kept a high amount of cash especially in other banks for their initial capital against the total number of deposits with the CDR of 498%. The CDR dropped to a more realistic ratio for the

subsequent years with more consistent results which ranging from 26% to 38% between 2007 and 2012.

Figure 6.18: Al Rajhi's Loan Deposit Ratio (LDR)
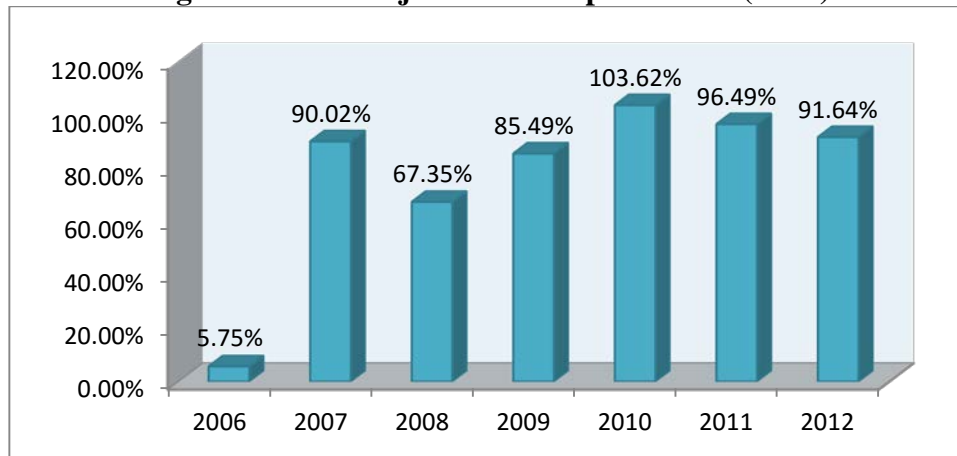
The bank only gave financing of around 5.75% of its fund from depositors in 2006 but greatly increased in 2007 with 90.02%. The bank's highest LDR was in 2010 at 103.62%. This trend can be seen in Figure 6.18.

Figure 6.19: Al Rajhi's Current Ratio (CR)
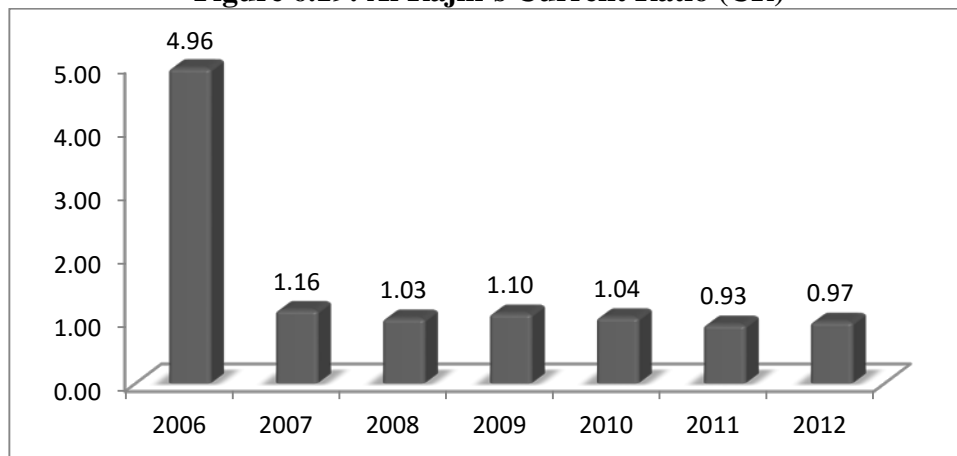
According to the trend for CR ratio illustrated in Figure 6.19, for the first five years, Al Rajhi maintained their current assets above the short-term liabilities that showed their capabilities in serving their creditors. Initially, the bank's CR was 4.95 but reduced significantly to 1.15 in 2007 and 1.03 in 2008. For the following year, the CR improved slightly to 1.10 but dropped to 1.09 in 2010. The recent CR was calculated at 0.97.

Figure 6.20: Al Rajhi's Current Assets Ratio (CAR)
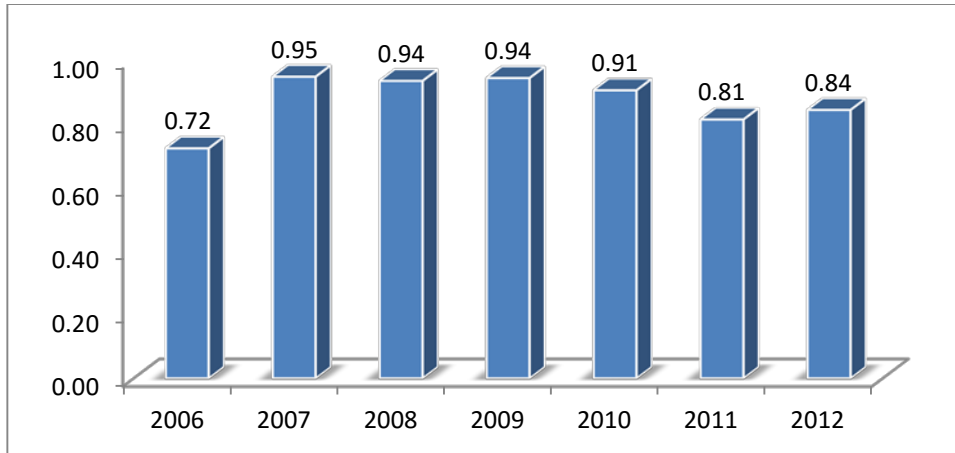
As depicted in Figure 6.20, the bank's CAR from 2006 to 2010 suggests that the bank retain more liquid assets with 72.30% in 2006. The next six years showed that the bank upheld more than 80.00% of its assets in liquid forms.

Risk and solvency ratios

Figure 6.21: Al Rajhi's Debt-to-Equity Ratio (D/E)
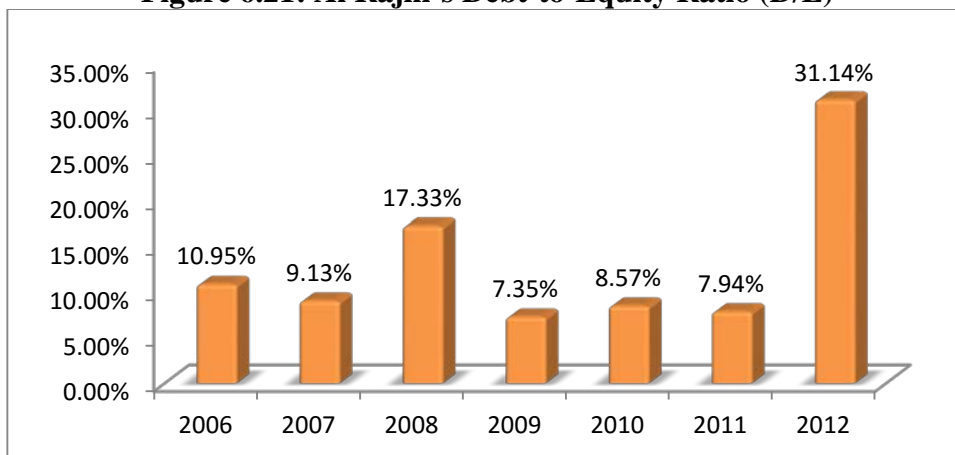
As per Figure 6.21, during the first six years of operation, the bank had a low level of debt. This can be seen from the small D/E figure of 10.95% in 2006 and 7.94% in 2011. However, the ratio increased drastically in 2012 with 31.14%. Higher D/E indicates that the bank could have their capabilities affected in absorbing any loan losses.

Figure 6.22: Al Rajhi's Debt-to-Assets Ratio (DTAR)
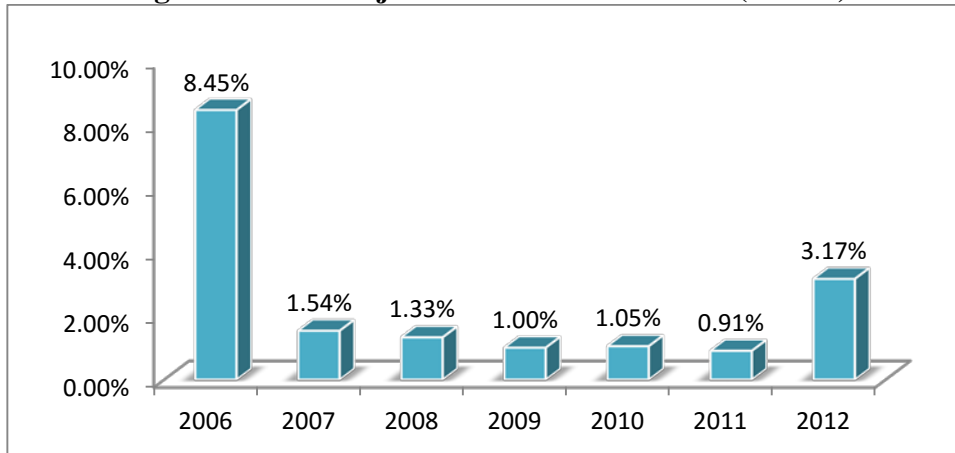
As identified in Figure 6.22, Al Rajhi's DTAR in 2006 is the highest with 8.45% but decreased significantly to 1.54% in 2007 and remained constant for the next four years. However, the ratio increased notably with the latest ratio at 3.17%.

Figure 6.23: Al Rajhi's Equity Multiplier (EM)
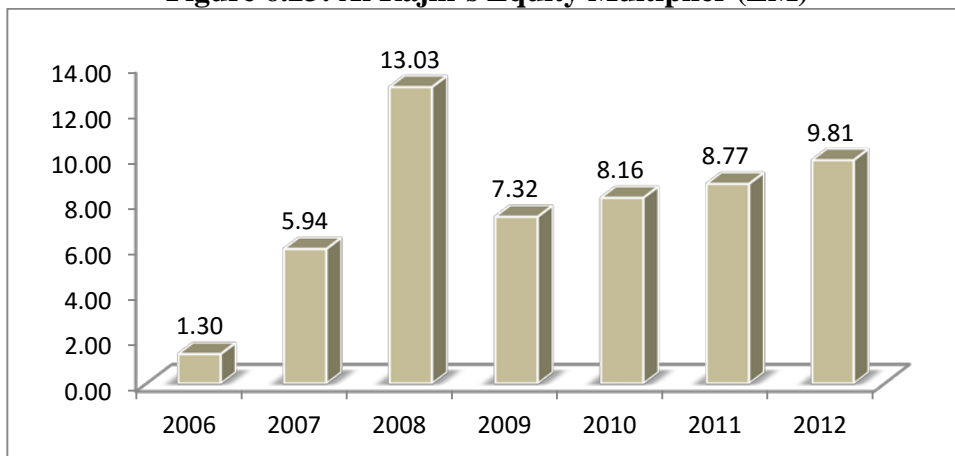
Based on the trend depicted in Figure 6.23, the year that the bank tried to expand rapidly by acquiring assets on credits was at 2008 with 13.03 unlike during the initial year at 1.30. The latest financial year indicated that the EM was at 9.81. The increasing trend during the last five years signifies that the bank increases its dependency to acquire assets through debt.

Commitment to economy and Muslim community ratios

Figure 6.24: Al Rajhi's Long-term Loan Ratio (LTA)
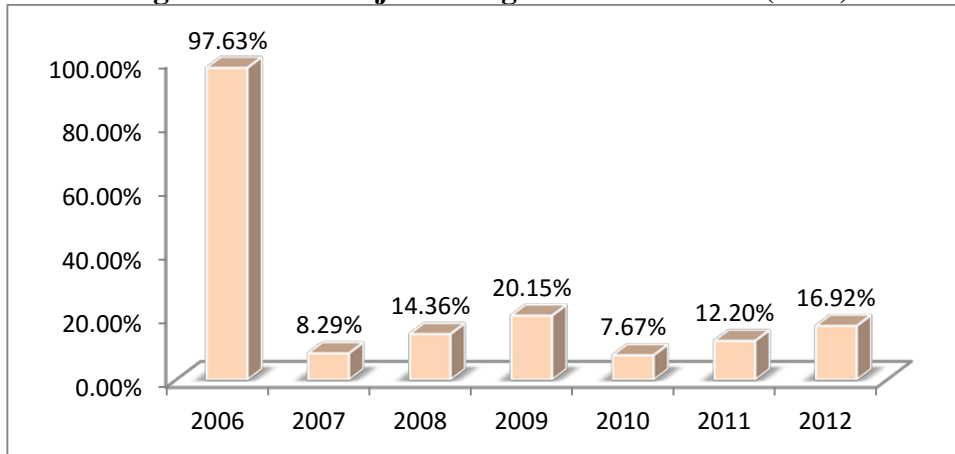
As illustrated in Figure 6.24, the bank started 2006 with 97.6% of its financing extended to its customers with maturity more than five years. Starting 2007 onwards, the ratio is more on stable patterns with a range of 7.67% to 20.15%.

Figure 6.25: Al Rajhi's Government Bond Investment (GBD)
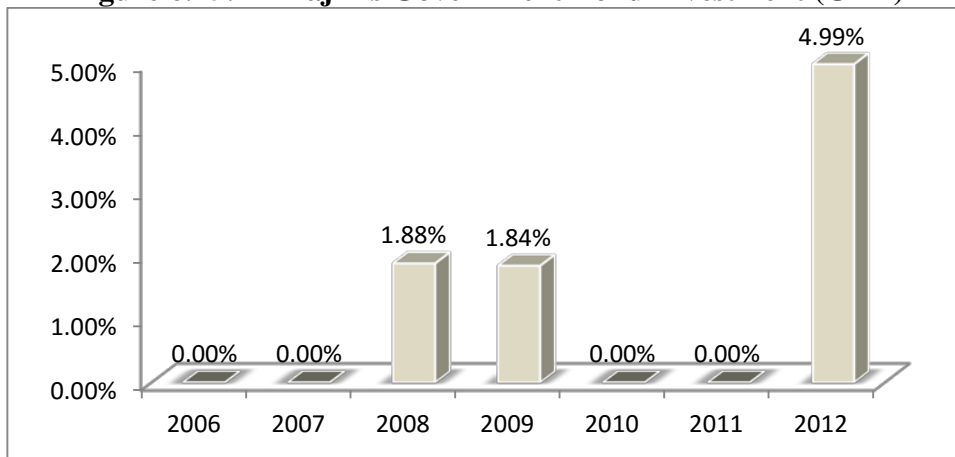
As can be seen in Figure 6.25, there was no investment in Malaysian government-related investments made by Al Rajhi in 2006 and 2007. However, the trend slightly changed in the following years whereby the bank invested an average of 1.86% of its fund from depositors in Government bonds in 2008 and 2009. The investment took a significant development with the increase of GBD 4.99% in 2012.

Figure 6.26: Al Rajhi's *Mudarabah-Musharakah* Ratio (MM/L)
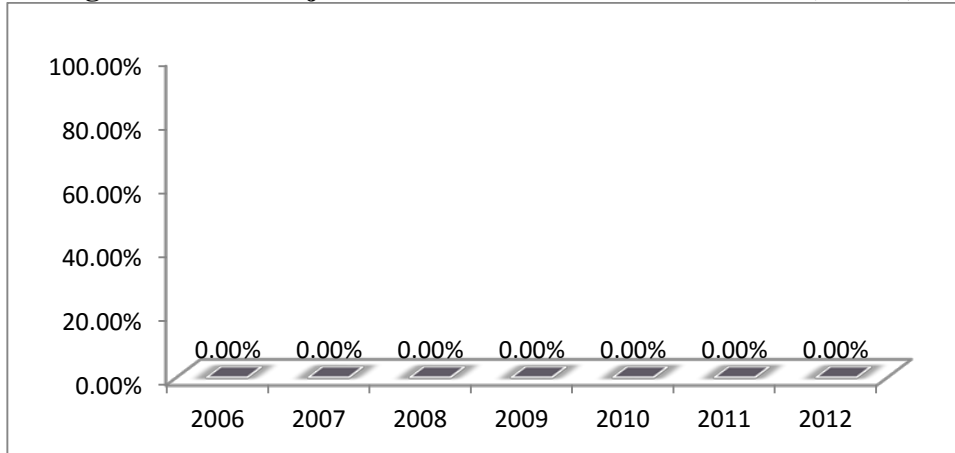
As the trend in Figure 6.26 shows, Al Rajhi did not finance any *mudarabah* and *musharakah* projects from its inception to the end of the financial year 2012.

General Reflections on the Financial Performance of Al Rajhi Bank

Although Al Rajhi incurred losses for the first three years of its operations, the bank has managed to maintain an upward movement towards profitability, which perhaps should be considered acceptable. However, the computation of the bank's liquidity ratios revealed an opposite trend. The bank faced a declining trend particularly for CDR, CR and LDR. Despite the erratic trend movement, it was observed that CAR had a sustainable growth in the seven-year operation. The remaining ratios for Al Rajhi showed that the bank managed to sustain an active growth towards its risk and solvency, as well as a contribution to government securities. However, the bank should consider offering *mudarabah* or *musharakah* financing to its customers in the near future since the bank has thus far failed to register any transaction in those contracts.

6.2.3 Alliance Islamic Bank Berhad (AIS)

Profitability ratios

Figure 6.27: AIS' Return on Asset (ROA) and Return on Equity (ROE)
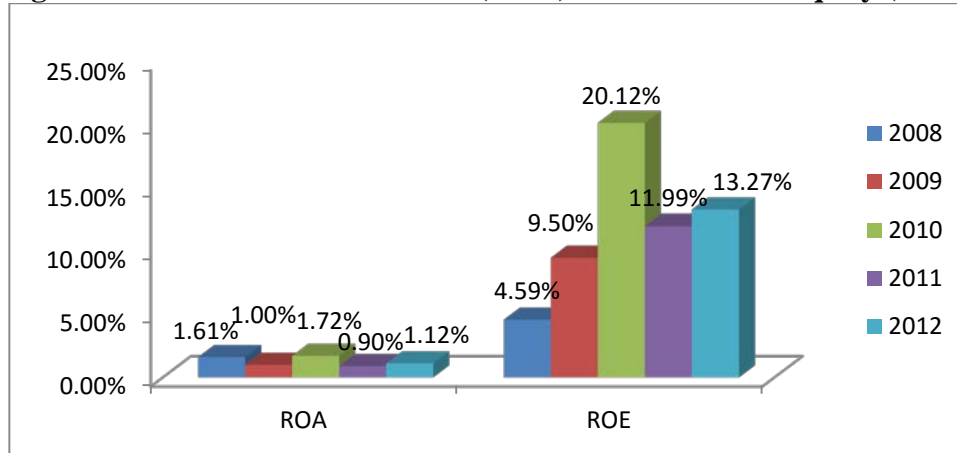
Alliance Islamic Bank Berhad (AIS) is one of the latecomers in the Islamic banking industry in Malaysia, in particular among the domestic Islamic banks. The bank managed to turn in a profit of RM47,784,000 in the first year of operation but reduced to RM31,722,000 in 2009. In terms of ratios, the bank's ROA suffered a similar pattern with a declining trend of 1.61% in 2008 to 1.00% in 2009 as can be seen in Figure 6.27. The ratio increased to 1.72% in 2010 before decreased to the lowest point in 2011 with 0.90%. The bank recorded 1.12% on its latest ROA.

For ROE, as depicted in Figure 6.27, it shows the opposite movement with 4.59% in 2008 and subsequently increased to 9.50% in 2009. The highest ROE was in 2010 at 20.12% before it dropped to 11.99% and 13.27% in 2011 and 2012 respectively. With an average of 11.89% throughout the five years, it can be explained that the bank generated 11.89% of profit from the money that its shareholders have invested.

Figure 6.28: AIS' Profit Expense Ratio (PER)
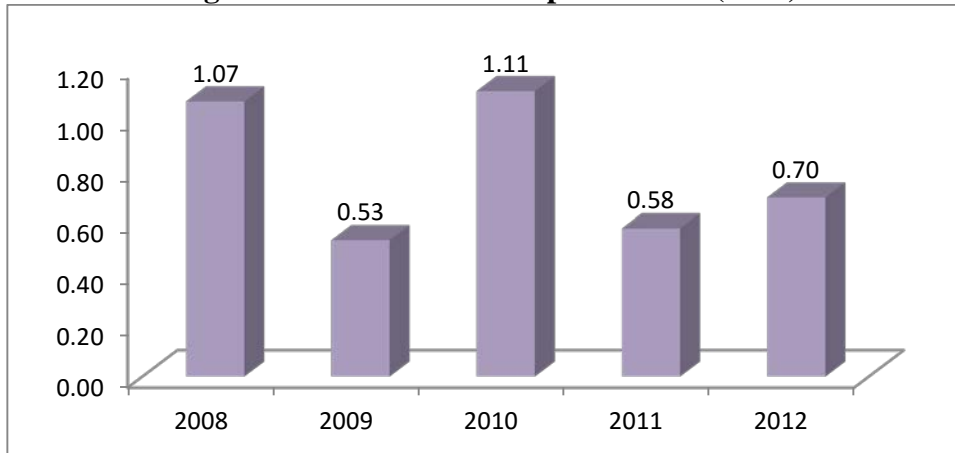
The bank demonstrates its ability in converting every RM1 of its spending to RM1 in profit with PER at 1.07 in 2008 as featured in Figure 6.28. However, the ratio dropped to half to 0.53 in 2009 but rose back to 1.11 in 2010. As of 2012, PER for the bank was at 0.70.

Liquidity ratios

Figure 6.29: AIS' Cash Deposit Ratio (CDR) and Loan Deposit Ratio (LDR)
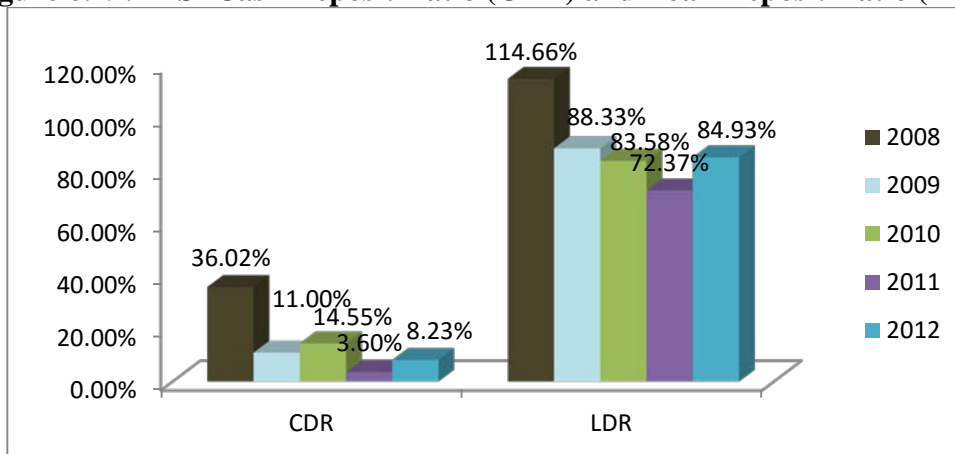
Based on Figure 6.29, the bank maintained a respectable level of cash to serve its depositors' funds with CDR of 36.02% in 2008 but dropped to 11% in 2009. There was a slight improvement in 2010 with CDR of 14.55% but plunged again to its lowest CDR of 3.60% in 2011.

A similar trend is observed for LDR as depicted in Figure 6.29, which was at 115% in 2008 and after that 88.33% and 83.58% in 2009 and 2010 respectively. This situation indicates that the bank is keeping more cash and reducing lending loans.

Figure 6.30: AIS' Current Ratio (CR) and Current Assets Ratio (CAR)
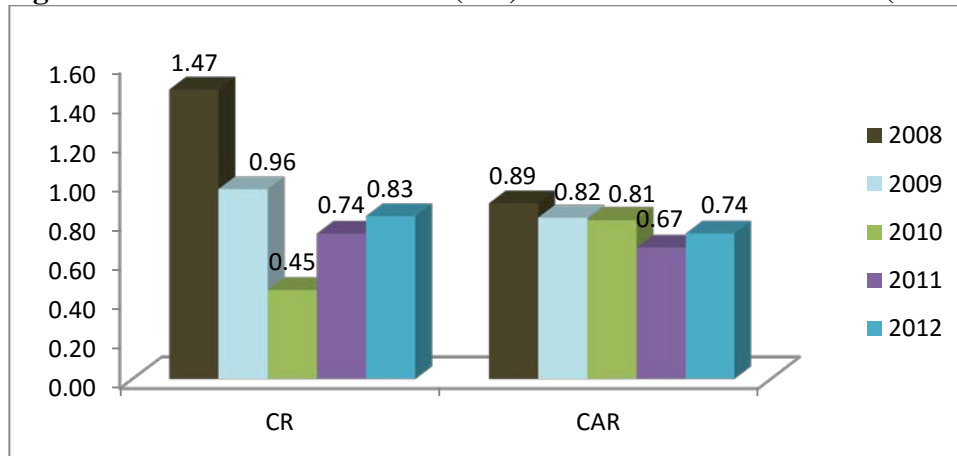
In terms of serving its debts, as shown in Figure 6.30, the bank had a respectable ratio of CR at the initial year of its service at 1.47 in 2008 and decreased to 0.96 in the next financial year. The CR further declined in 2010 with 0.45 but manage to improve its CR to 0.74 and 0.83 in 2011 and 2012 respectively. With an average of 0.89, the bank is a little bit short in servicing its short term obligations.

As can also be seen in Figure 6.30, the liquidity ratio as measured by CAR was 0.89 in 2008, 0.82 in 2009, 0.81 in 2010, 0.67 in 2011 and 0.74 in 2012. Overall, the computation of the ratio signifies the bank's approach to keeping the assets in a liquid manner but mostly by giving it as financing to lenders and less cash in their vault.

As can be seen in Figure 6.31, AIS reported D/E of 11.8% in 2008 and increased significantly to 41.94% in the following year. However, the bank's D/E shows a more stable pattern with 27.56% in 2010, 26.52% in 2011 and 21.97% in 2012. This trend means that the bank can cushion any financial impact towards the bank's assets depreciation and loan losses.

Risk and solvency ratios

Figure 6.31: AIS' Debt-to-Equity Ratio (D/E) and Debt-to-Assets Ratio (DTAR)
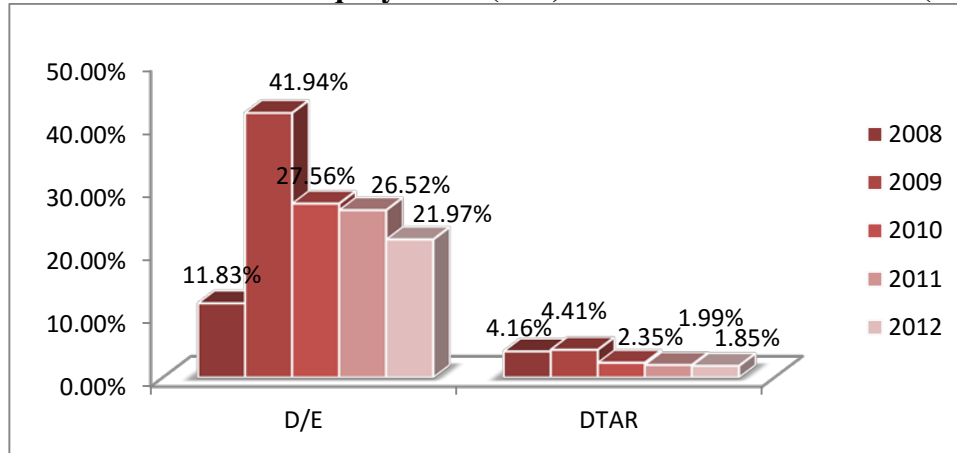
In terms of DTAR, as depicted in Figure 6.31, the bank demonstrated its less reliance to use debt to finance its assets with 4.16% and 4.41% in 2008 and 2009 respectively. The DTAR reduced to 2.35% in 2010 and further declined to 1.99% in 2011 and 1.85% in 2012.

Figure 6.32: AIS' Equity Multiplier (EM)
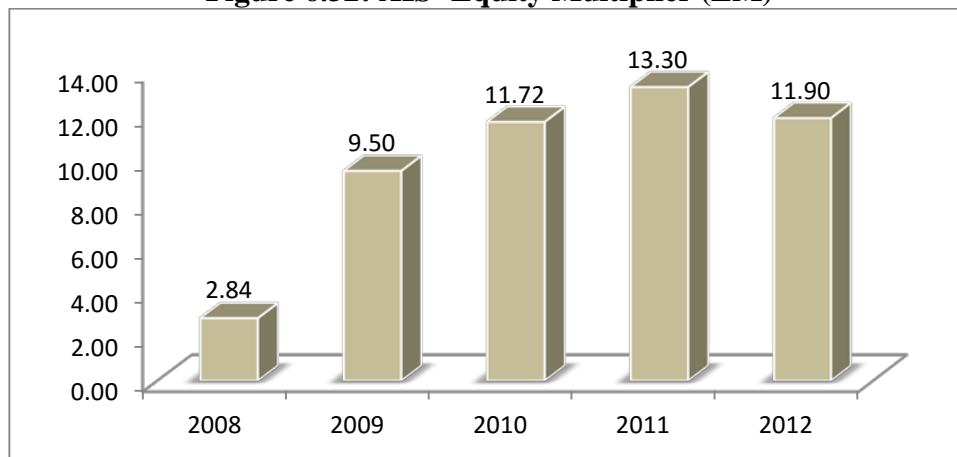
As Figure 6.32 shows, the highest EM was recorded in 2011 with 13.30 while the lowest was during their first year of operation at 2.84. In conclusion, the bank became more dependent on debt each year.

Commitment to economy and Muslim community ratios

Figure 6.33: AIS' Commitment to Economy and Muslim Community Ratios
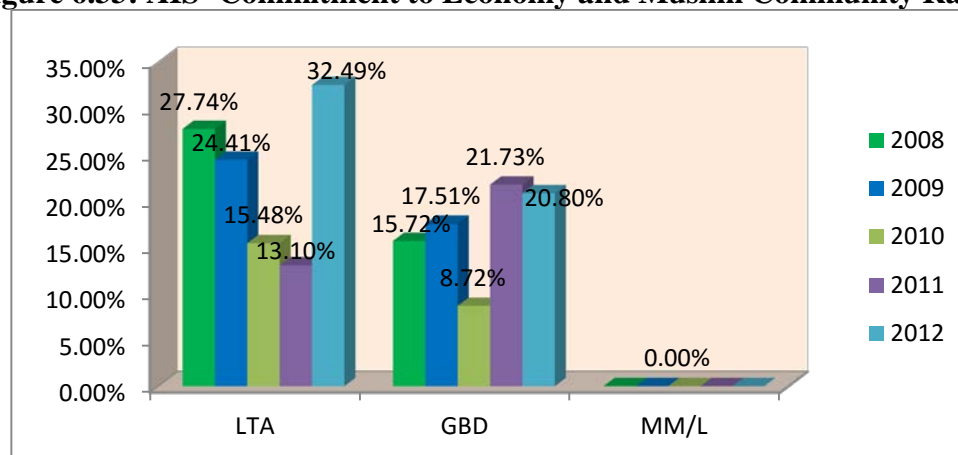
As per Figure 6.33, the LTA of AIS was in a declining trend from 2008 to 2011 with the lowest ratio recorded at 13.10%. However, the ratio surged to the highest score in the latest report at 32.49%.

AIS' GBD in Figure 6.33 shows a consistent trend during the first two years of operation before plummeting to 8.72% in 2010. The ratio rose back in 2011 and 2012 with a ratio of 21.73 and 20.80% respectively. However, there was no activity recorded for *mudarabah* and *musharakah* transactions since the beginning of their operation.

General Reflections on the Financial Performance of AIS

During the seven years of operation, the profitability ratios of AIS revealed an upward trend with the exception to ROE, which indicates contrasting performance. Although the bank's financial performance has improved yearly, the bank's liquidity level faced opposite circumstances where it saw a declining trend over the years. Overall, AIS performance looks promising in terms of profitability but not as good in terms of risk and solvency, and commitment to economy and Muslim society.

6.2.4 AmIslamic Bank Berhad (AmIslamic)

Profitability ratios

Figure 6.34: AmIslamic's Return on Assets (ROA)
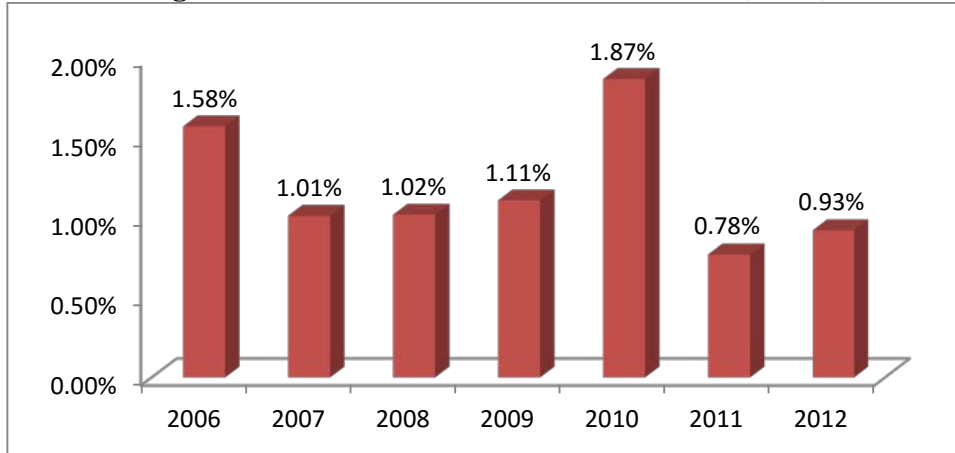
As can be seen in Figure 6.34, AmIslamic established a consistent trend of ROA with an average of 1.19% throughout the years of 2006 to 2012. The highest ROA was recorded in 2010 with 1.87%, and the lowest was in the year of 2011 with 0.78%.

Figure 6.41: AmIslamic's Return on Equity (ROE)
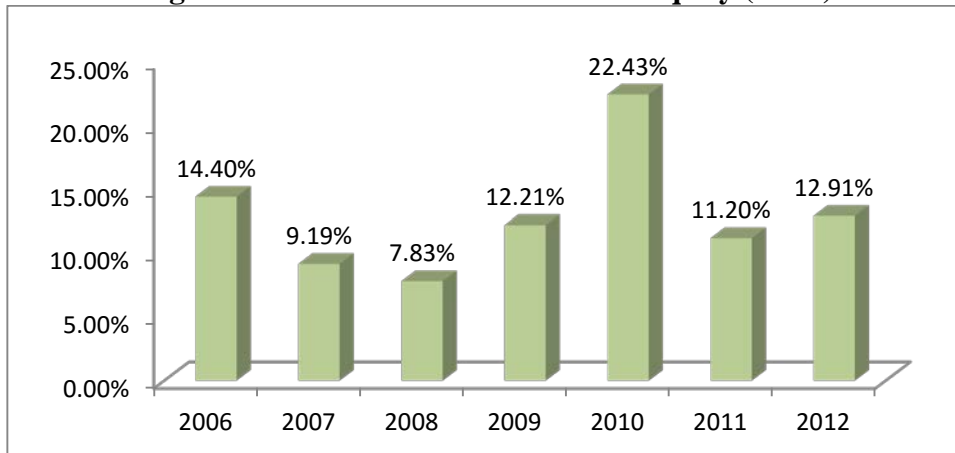
According to Figure 6.41, AmIslamic bank managed to generate 14.4% of its returns from the capital in 2006 but reduced to 9.19% and further dropped to 7.83% in 2007 and 2008 respectively. The bank recovered its ROE in the following year with 12.21% and recorded the highest ROE in 2010 with 22.43%.

Figure 6.42: AmIslamic's Profit Expense Ratio (PER)
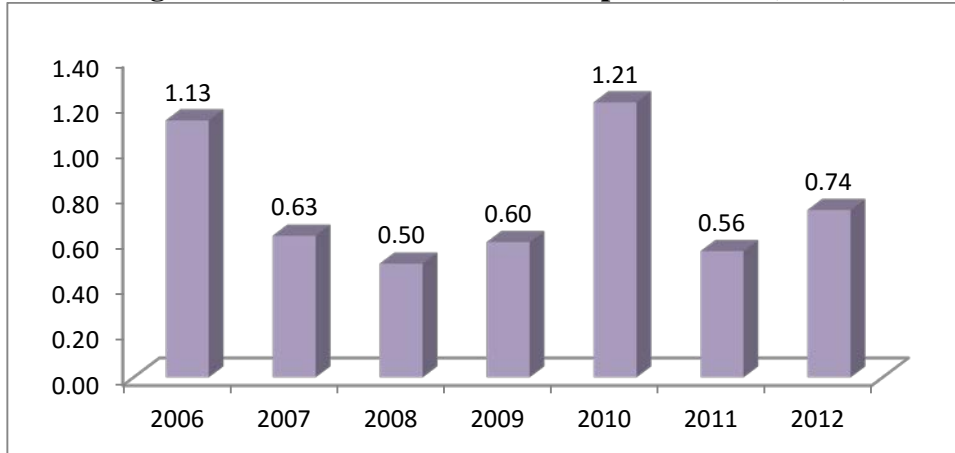
As depicted in Figure 6.42, AmIslamic bank started with promising efficiency level at 1.13 of PER in 2006, which, however, declined to 50% to 0.63 and 0.50 in 2007 and 2008 respectively. In 2009, the bank managed to perform better at 0.59 and recorded the highest PER in 2010 reported at 1.21. The PER dropped to 0.56 and 0.74 in 2011 and 2012 respectively.

Liquidity ratios

Figure 6.43: AmIslamic's Cash Deposit Ratio (CDR)
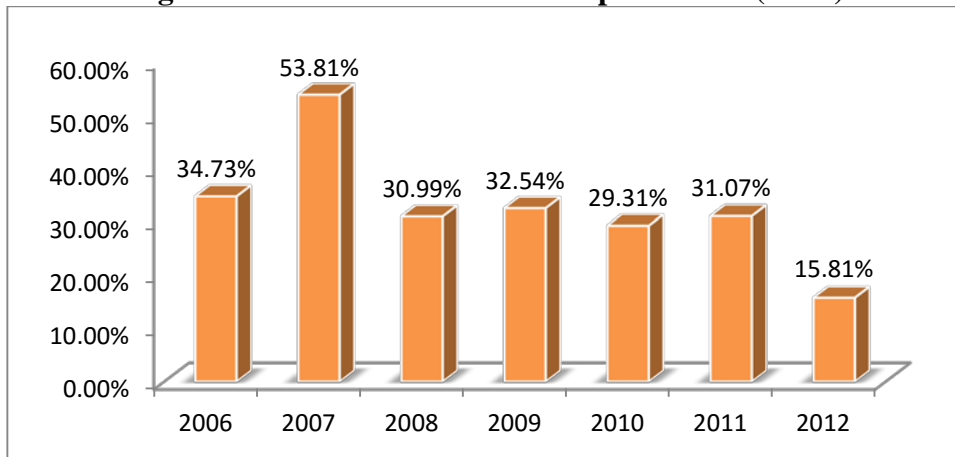
As for CDR, Figure 6.43 shows that the bank maintained about 34.73% of its depositors' money in cash in 2006 and 53.81% in 2007. The level dropped to the range of 1/3 and remained that way throughout 2008 to 2010 with 30.99%, 32.54% and 29.31% respectively. The lowest CDR for AmIslamic was in 2012 with 15.81%.

Figure 6.44: AmIslamic's Loan Deposit Ratio (LDR)
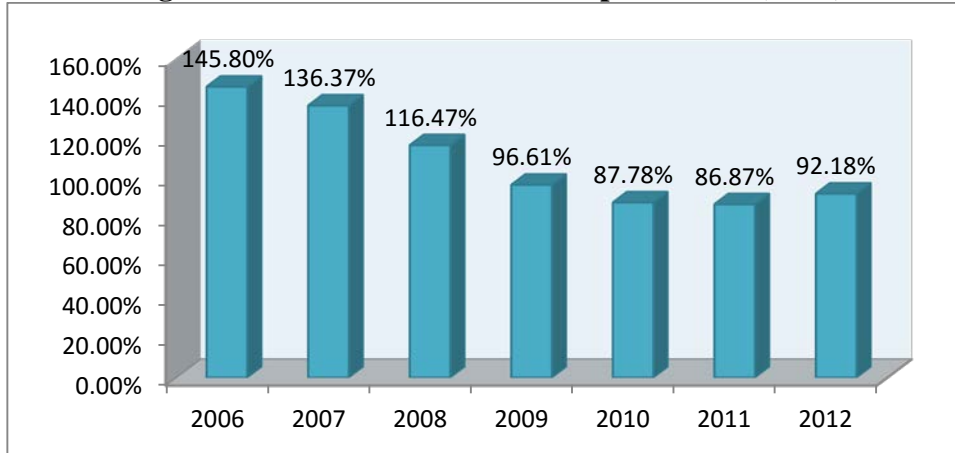
Figure 6.44 suggests a reducing pattern of LDR with 145.8% in the initial year of operation and gradually reduced in the consecutive years. The lowest ratio was in 2011 with 86.87%. The ratio slightly increased in 2012 to 92.18%. Overall, the average LDR for AmIslamic is 108.87%.

Figure 6.45: AmIslamic's Current Ratio (CR)
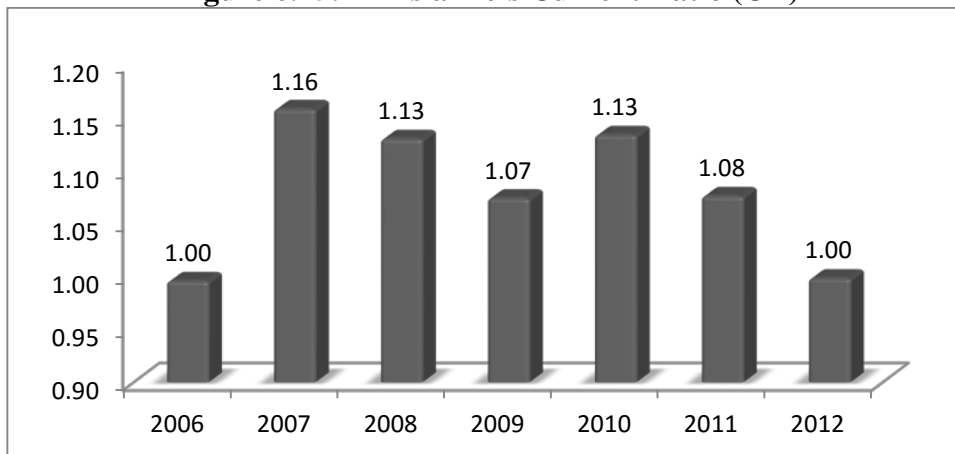
As depicted in Figure 6.45, throughout the seven year period, AmIslamic's CR was in an inconsistent trend whereby in 2006 the CR was at 1.00, 1.16 in 2007, 1.13 in 2008, 1.07 in 2009 and increased back 1.13 in 2010. The overall performance illustrates a stable performance with regards to the bank's liquidity, which indicates their capabilities in meeting their financial obligations.

Figure 6.46: AmIslamic's Current Assets Ratio (CAR)
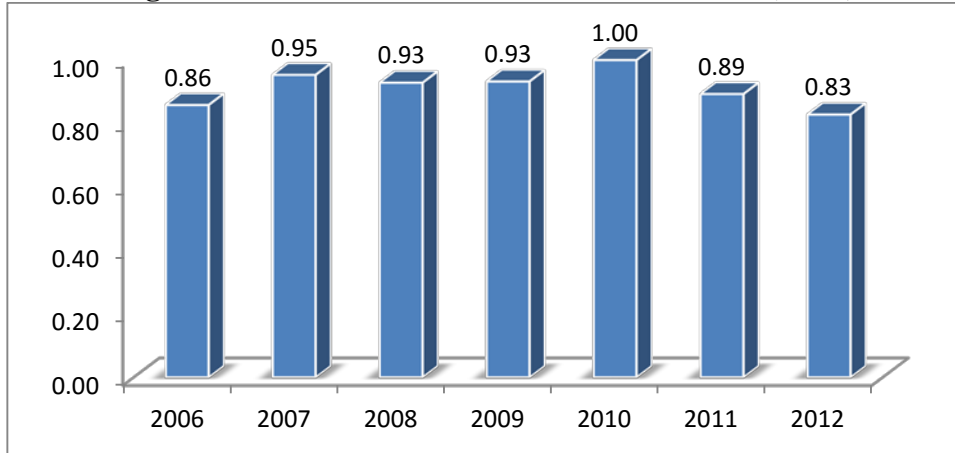
Based on Figure 6.46, the bank keeps more than 0.83 of its assets in liquid forms with the lowest ratio recorded in the latest annual report. The highest CAR was in 2010 at 1.00. Generally, the bank has a constant CAR throughout 2006 to 2012.

Risk and solvency ratios

Figure 6.47: AmIslamic's Debt-to-Equity Ratio (D/E)
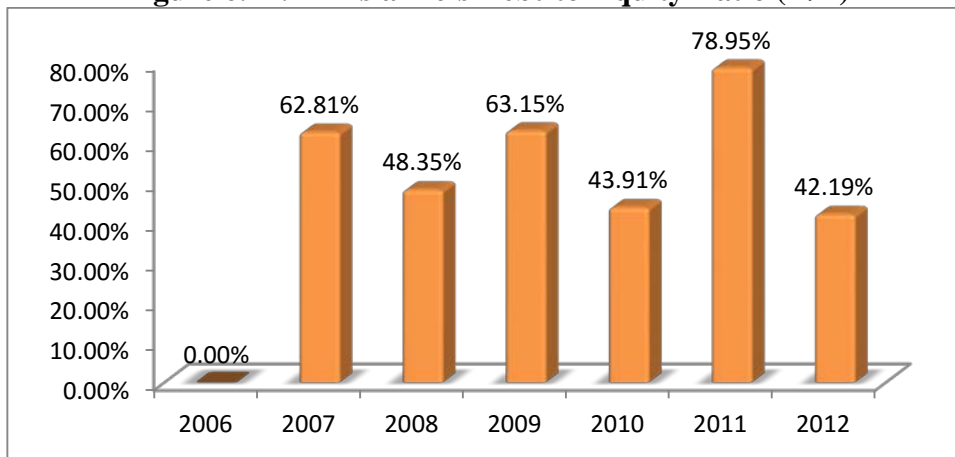
According to Figure 6.47, the bank recorded the worst D/E of 79.85% in 2011 while 2006 marked the lowest D/E due to zero debt. Overall, the trend indicates inconsistencies throughout the seven years of operation.

Figure 6.48: AmIslamic's Debt-to-Assets Ratio (DTAR)
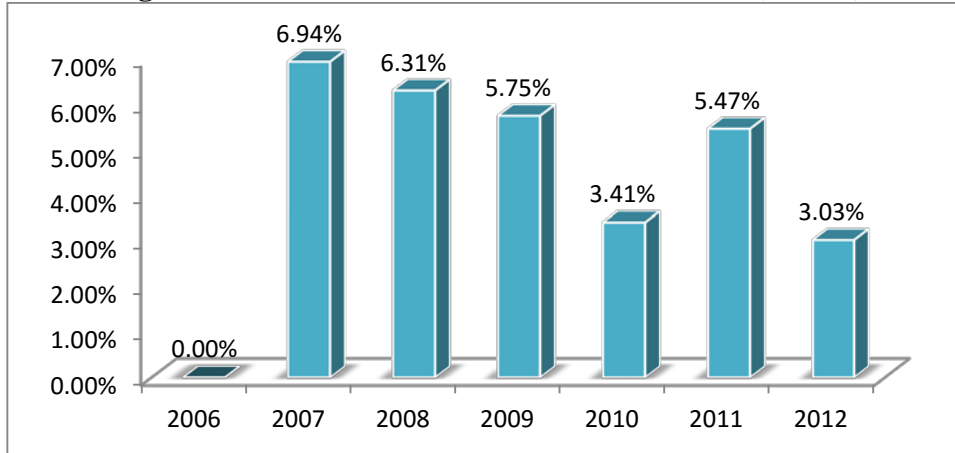
Similar to D/E, the bank's DTAR started with 0% in 2006 and increased to 6.94% in 2007. The trend decreased in the next three years to 6.31%, 5.75% and 3.41% in 2009, 2010 and 2011 respectively.

Figure 6.49: AmIslamic's Equity Multiplier (EM)
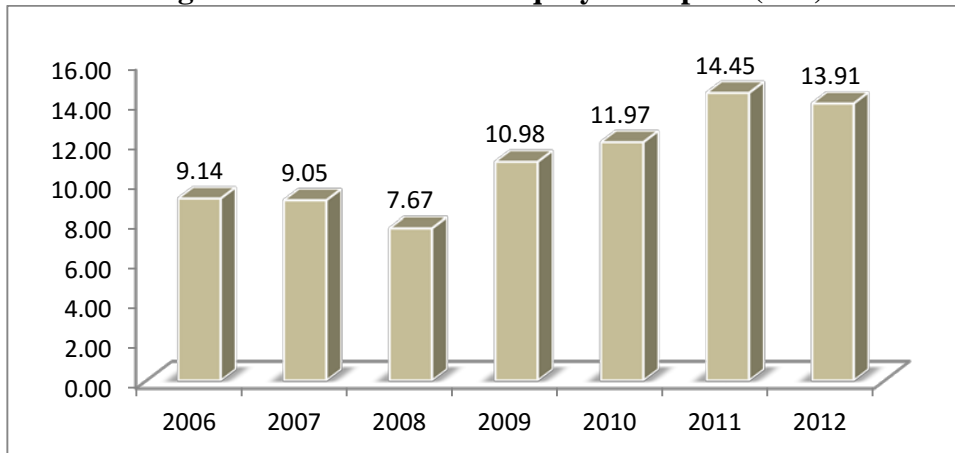
Based on the EM illustrated in the Figure 6.49, AmIslamic bank depended on debt to bankroll its assets. The first two years of operation revealed a sustained performance at 9.14 and 9.05 respectively. However, the year 2008 showed a dropped to 7.67 but rose again in 2009 with 10.98. The latest EM was recorded at 13.91 in 2012. It can be concluded that in 2012, the bank's assets worth almost 14 times the size of its equity.

Commitment to economy and Muslim community ratios

Figure 6.50: AmIslamic's Long-term Loan Ratio (LTA)
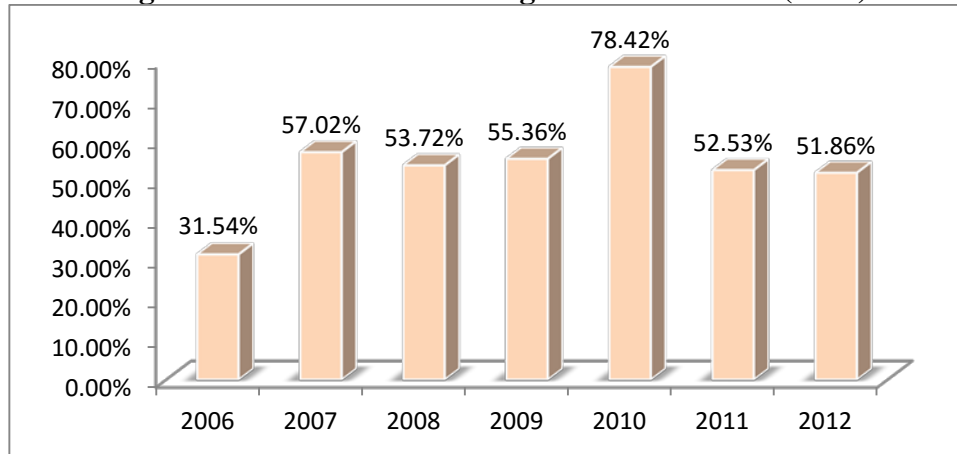
As can be seen in Figure 6.50, on average, the bank financed 54.35% of its total loan to long-term projects with the lowest LTA recorded in 2006 at 31.54% and the highest in 2010 at 78.42%.

Figure 6.51: AmIslamic's Government Bond Investment (GBD)
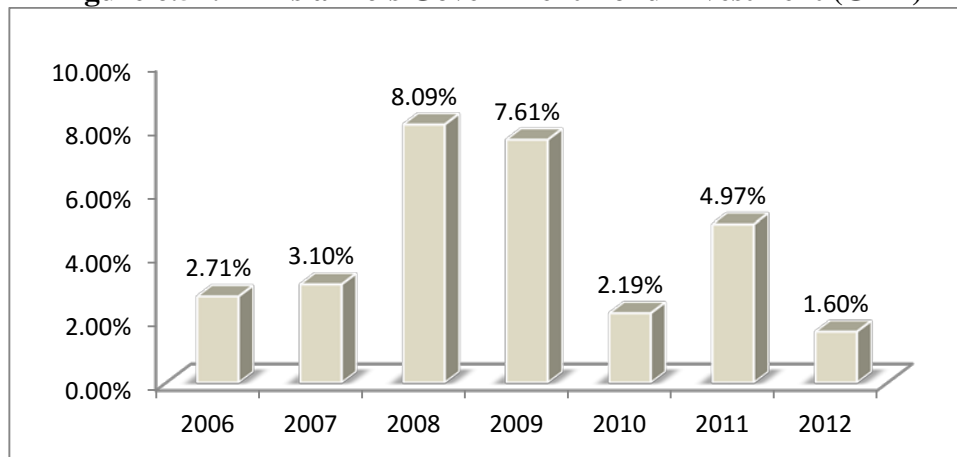
According to Figure 6.51, the bank never invested more than 9% of depositors' funds in Government bonds with the highest to-date was reported in 2008 with 8.09%. The latest ratio marked in 2012 stood at 1.60%.

Figure 6.52: AmIslamic's *Mudarabah-Musharakah Ratio (MM/L)*
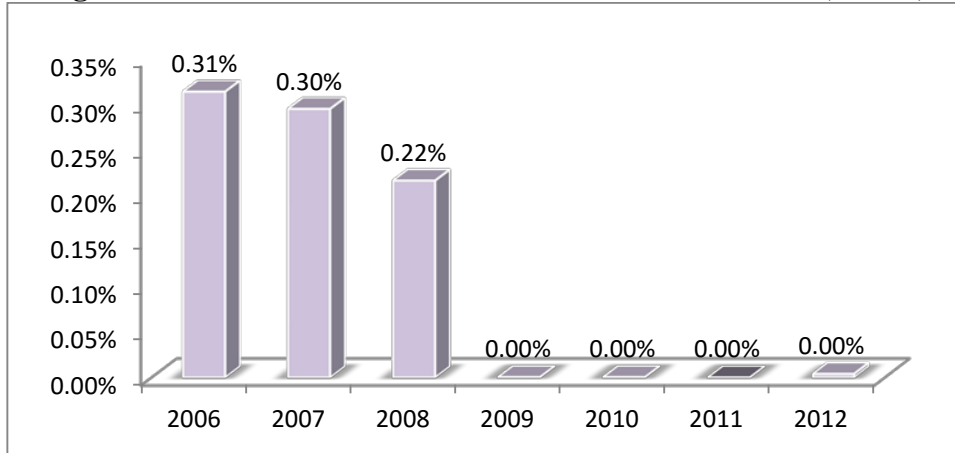
As depicted in Figure 6.52, the bank was involved in *mudarabah* and *musharakah* contracts in the earlier parts of their operation with 0.31% in 2006, 0.30% in 2007 and 0.02% in 2008. Conversely, there were no transactions involving *mudarabah* and *musharakah* for the year 2009 until 2012.

General Reflections on the Financial Performance of AmIslamic

Based on the ratio computation, overall, AmIslamic started its performance well in 2006. Conversely, the bank faced a declining trend between the year 2007 and 2008. Then again, due to improved financial performance, the year 2009 indicated an upward movement trend and continued to 2010 but dropped again in 2011 and 2012. Meanwhile, a different pattern was observed towards the liquidity ratios where it revealed a decreasing trend from the first year of operation up to 2012. With regards to the bank's risk as well as a commitment to the economy and Muslim society, AmIslamic maintained a stable performance for the seven-year period except for the MM/L ratio which registered a declining pattern.

6.2.5 Asian Finance Bank (AFB)

Profitability ratios

Figure 6.53: AFB's Return on Assets (ROA)
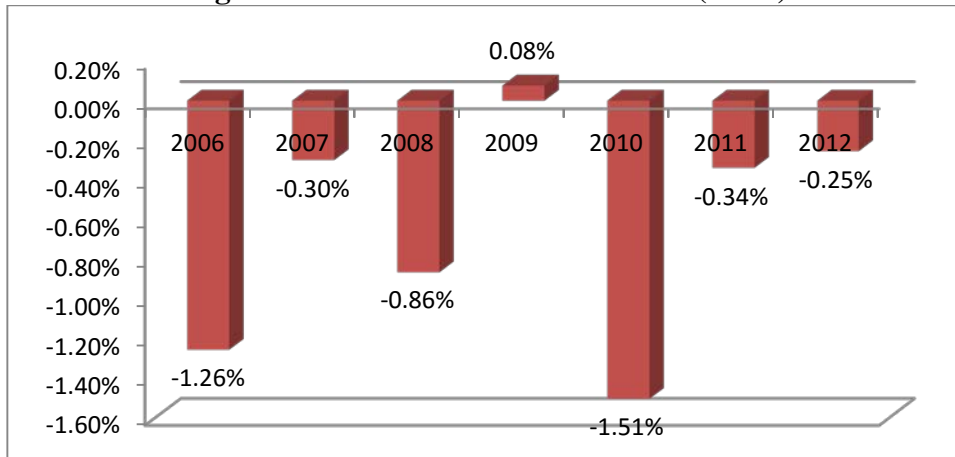
Similar to Al Rajhi, AFB being the third recipient of foreign Islamic bank license in Malaysia also suffered three years of losses. This impacted the profitability ratios of the bank with ROA reported the worst of the three years in 2006 at -1.26%. Due to improved financial performance, the bank's ROA has managed to perform better by achieving 0.08% in 2009. However, the company's ROA slumped to the lowest in 2010 with -1.51%.

Figure 6.54: AFB's Return on Equity (ROE)
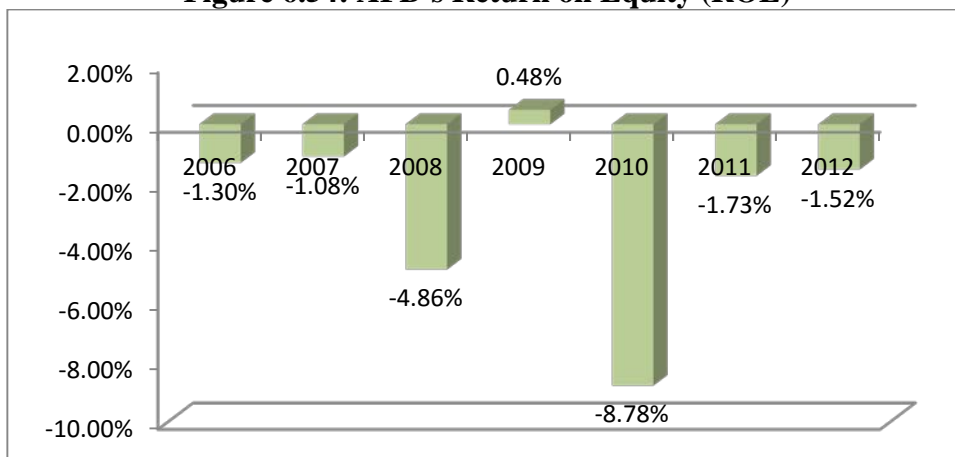
As portrayed in Figure 6.54, losses incurred by the bank caused a similar trend for ROE. The ROE computation for 2006 and 2007 was -1.30% and -1.08% respectively. The ROE became worse in 2008 at -4.86% and improved substantially in 2009 to 0.48% due to the profit generated during the financial year. As the company suffered another streak of losses between 2010 and 2012, the ROE stood at -8.78%, -1.73% and -1.52% respectively.

Figure 6.55: AFB's Profit Expense Ratio (PER)
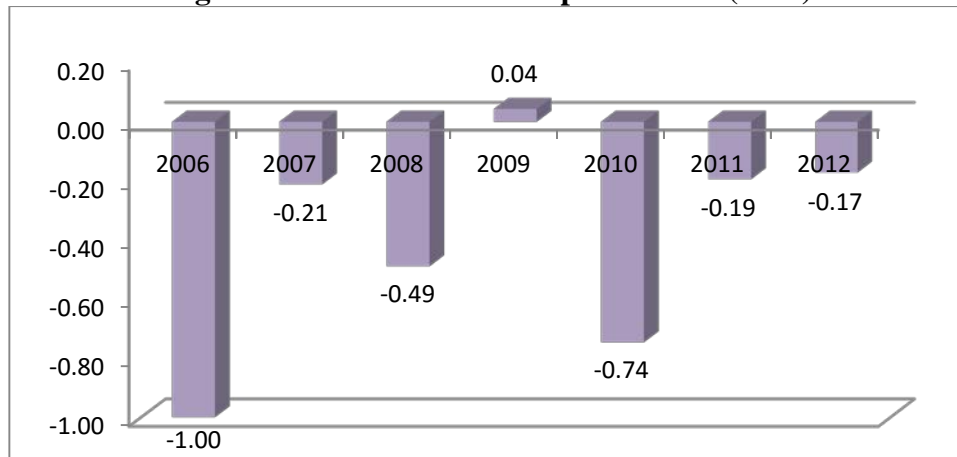
Similar to the other two profitability ratios, the bank's PER recorded negative results starting with -1.00 in 2006, -0.21 in 2007 and -0.49 in 2008. Based on the latest annual report, AFB's PER was at -0.17. In conclusion, 2009 is considered the best performing year of the company with regards to profitability.

Liquidity ratios

Figure 6.56: AFB's Cash Deposit Ratio (CDR)
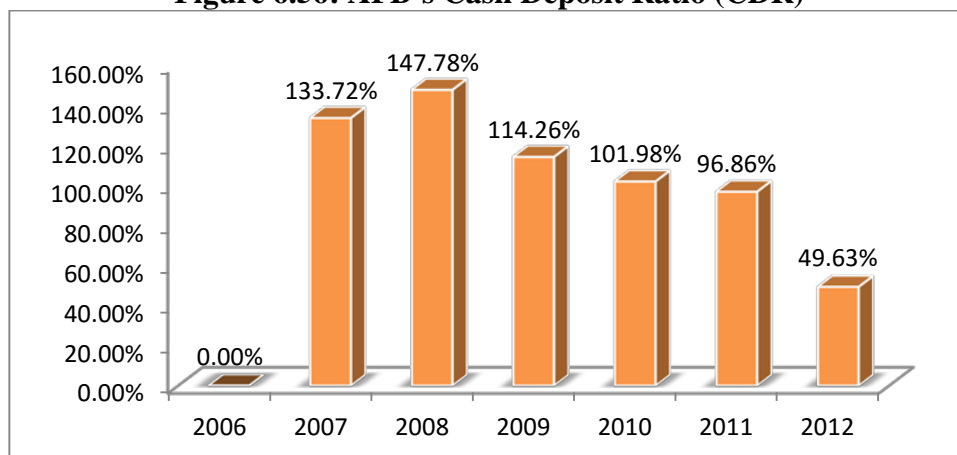
There were no deposits received from customers for Asian Finance in the first year of the bank's operation hence 0% for CDR and LDR as per Figure 6.56 and Figure 6.57 respectively.

According to Figure 7.56, the bank maintains their cash above the level of depositors' funds throughout their next four years of operation. The highest rate was in 2008 with 148% but was in a decreasing trend from 2009 onwards and slumped to the lowest in 2012 with 49.63%.

Figure 6.57: AFB's Loan Deposit Ratio (LDR)
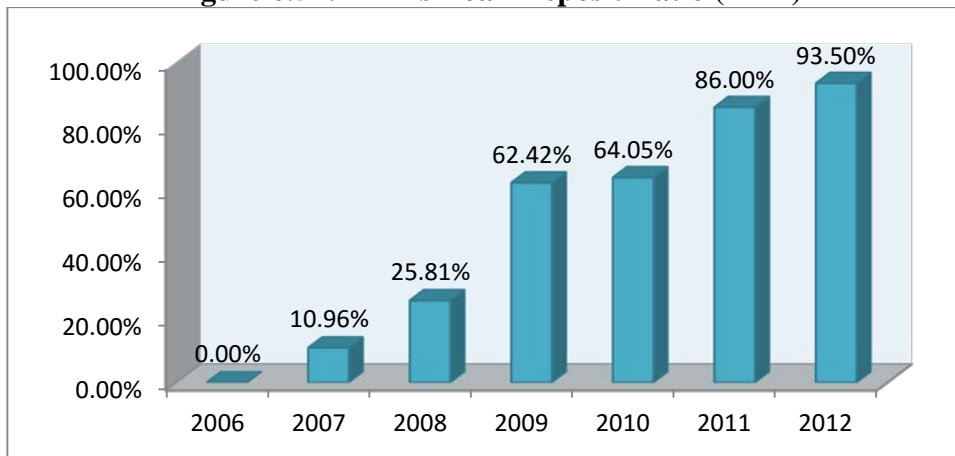
As for LDR, the Asian Finance Bank shows an increasing pattern with the bank recorded 10.96% in 2007, as shown n Figure 6.57. The ratio increased to 25.81% in the following year, 62.42% in 2009, 64.05% in 2010, 86.00% in 2011 and 93.50% in 2012. This signifies that AFB is becoming less liquid on a yearly basis.

Figure 6.58: AFB's Current Ratio (CR)
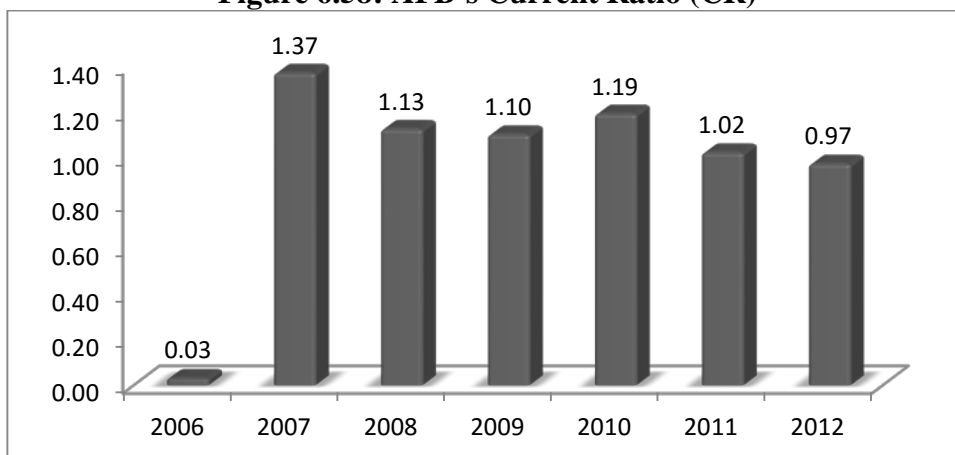
As depicted in Figure 6.58, the bank ended its first-year operation with CR of 0.03 and improved greatly to 1.37 in 2007. The ratio remained stable at 1.13, 1.10 and 1.19 in 2008, 2009 and 2010 respectively. The current ratio stood at 0.97 which indicates that the bank may find slight difficulty to satisfy its current obligations. The recommended CR should be more than one.

Figure 6.59: AFB's Current Assets Ratio (CAR)
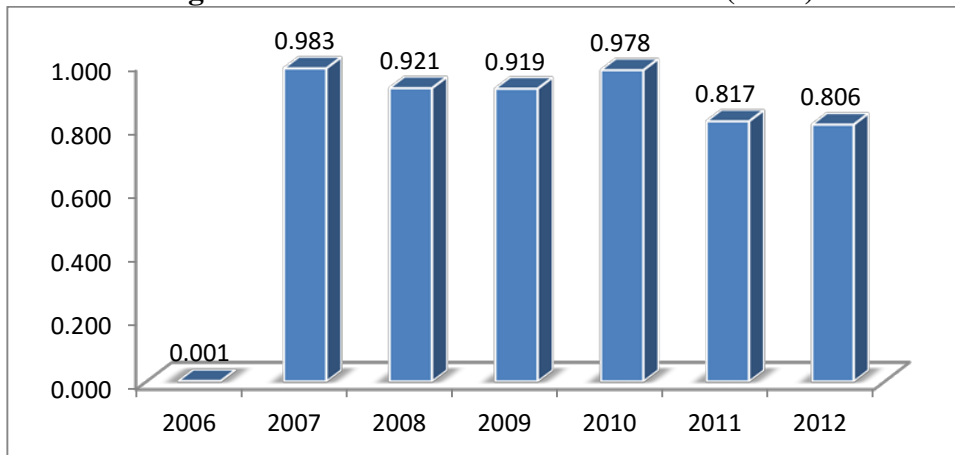
The graph in Figure 6.59 above indicates that in 2006, the bank had only 0.10% of the total assets in liquid forms. However, since 2007 the bank has been more consistent and retained more than 80% of current assets with the highest of 97.76% in 2010.

Risk and solvency ratio

Figure 6.60: AFB's Debt-to-Equity Ratio (D/E)
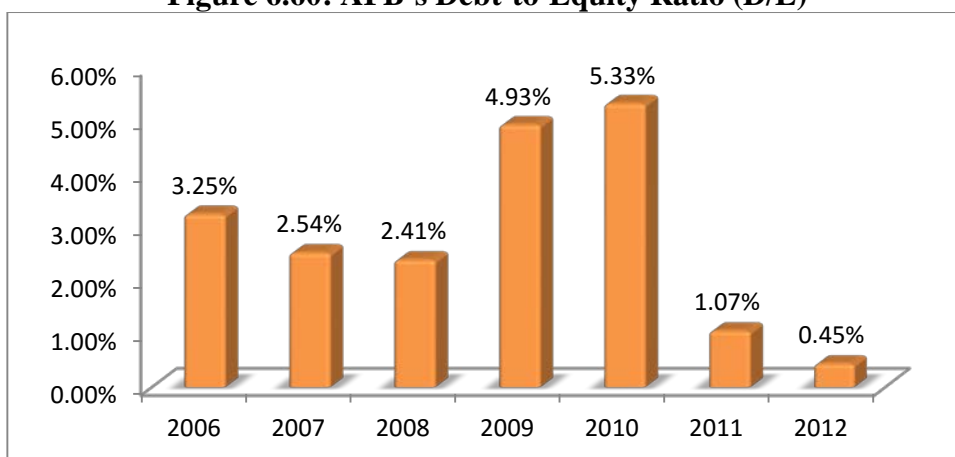
As per Figure 6.60, the bank started their operation with impressive D/E of 3.25% and kept on improving for the next two years with 2.54% and 2.41% in 2007 and 2008

respectively. The bank's D/E increased to 4.93% in 2009 and peaked at 2010 with 5.33%. Currently, the bank maintains a respectable D/E of 0.45%.

Figure 6.61: AFB's Debt-to-Assets Ratio (DTAR)
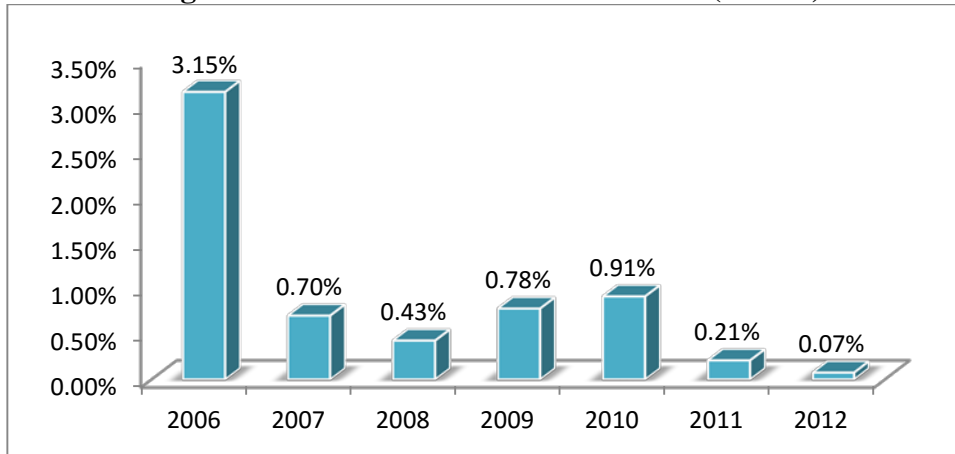
Due to the bank's lower debt in 2006, the DTAR was recorded at 3.15%. The bank's DTAR reduced to a consistent trend starting in 2007 with 0.70%. Next, the rate dropped to 0.43% in 2008, 0.78% in 2009, 0.91% in 2010, 0.21% in 2011 and 0.07% in 2012. The trend can be observed in Figure 6.61.

Figure 6.62: AFB's Equity Multiplier (EM)
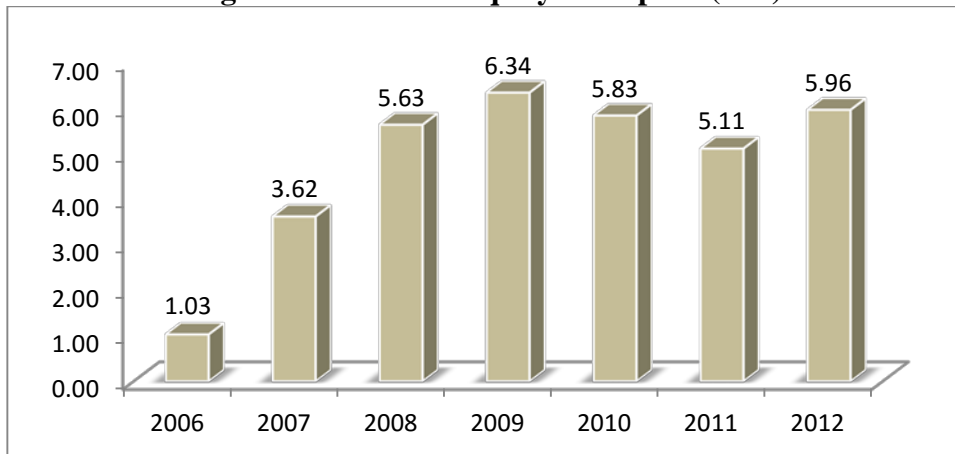
As depicted in Figure 6.62, the bank uses debt to finance their acquisition of assets especially in 2009 with the highest EM of 6.34. This scenario was a significant increase from the bank's first-year operation in 2006 with EM at1.03. Hence, it provides a greater risk to the bank that indicates the bank has an additional fund in converting the assets using the share capital.

Commitment to economy and Muslim community ratios

Figure 6.63: AFB's Long-term Loan Ratio (LTA)
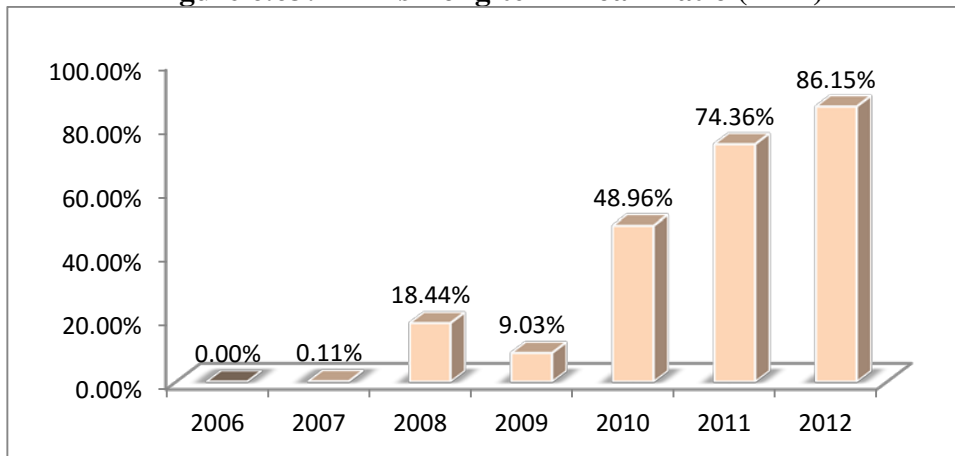
AFB did not register any financing activity in 2006 as portrayed in Figure 6.63. The bank began to support the long-term project in 2008 with LTA at 18.44%, but the performance declined to 9.03% in 2009. However, the LTA improved drastically to 48.96% in 2010 and further increased to 74.36% and 86.15% in 2011 and 2012 respectively.

Figure 6.64: AFB's Government Bond Investment (GBD)
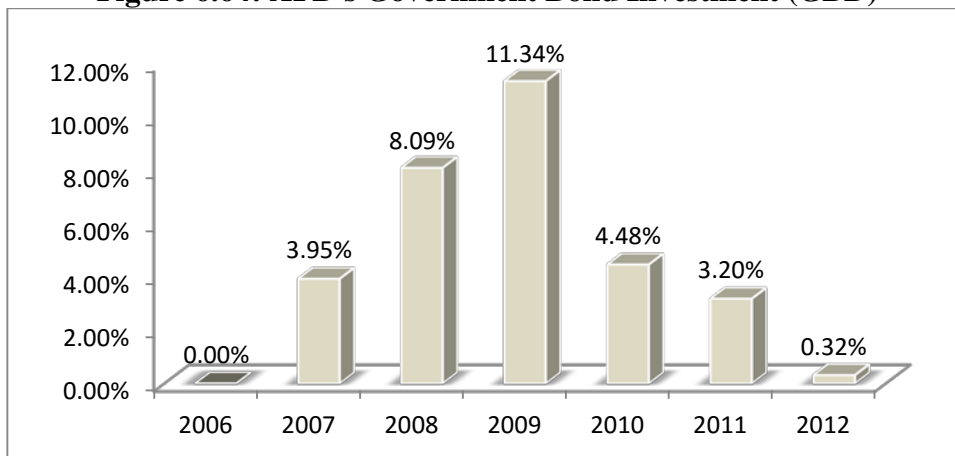
Figure 6.64 shows that AFB's GBD was 0% in 2006. However, it showed an increasing trend with 3.95% in 2007, 8.09% in 2008 and 11.34% in 2009. In 2010, the GBD declined to 4.48% and further decreased to 3.20% and 0.32% in 2011 and 2012 respectively. By looking at the latest situation above, it shows that the bank tends to invest their funds in other government-linked investments.

Figure 6.65: AFB's *Mudarabah-Musharakah* Ratio (MM/L)
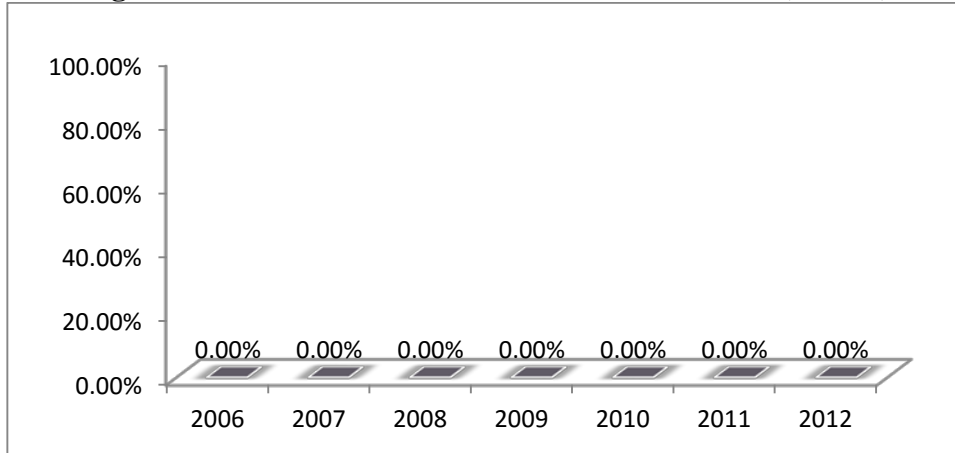
The bank was not involved in any *mudarabah* and *musharakah* transactions since 2006 to 2012.

General Reflections on the Financial Performance of Asian Finance Bank

AFB maintained active growth towards its profitability on a yearly basis but suffered a massive loss in 2010. As a result, it highlighted a progressive upwards movement in relation to the profitability ratios from 2006 up to 2009 but not in 2010. However, it should be noted that even though the bank showed positive growth, they recorded losses throughout the seven-year sample except for 2009. The bank's liquidity level indicated a stable growth with not many changes with the seven-year period. As the bank continued its operation, AFB faced greater risk commencing from its first year service in 2006 with EM illustrated as in increasing pattern (becoming more reliance on debt in purchasing assets). Efforts by the bank towards contribution to the society revealed an increasing trend that summarised the bank's initiative in supporting the Islamic banking sector but the support toward government bonds registered a declining pattern.

6.2.6 Bank Islam Malaysia Berhad (BIMB)

Profitability ratios

Figure 6.66: BIMB's Return on Assets (ROA)
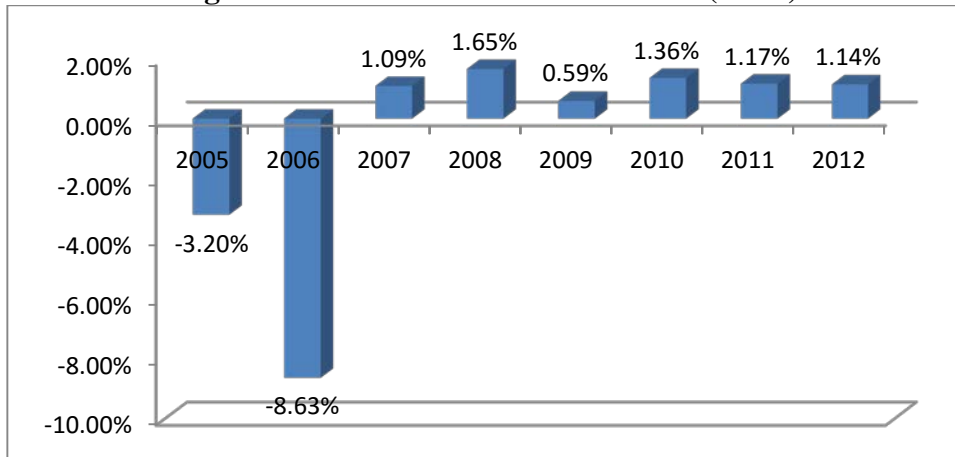
Being the first Islamic bank in the country, BIMB managed to record a stable positive growth towards its ROA during the period from 1990 to 2004 as depicted in Figure 6.66. In 2005 and 2006, the bank reported net losses that resulted in an adverse ROA with the worst in the latter with -8.63%. Despite the losses in the previous year, BIMB managed to turn around its losses to profit, where the ROA for the years 2007 to 2012 showed an improvement in positive results.

Figure 6.67: BIMB's Return on Equity (ROE)
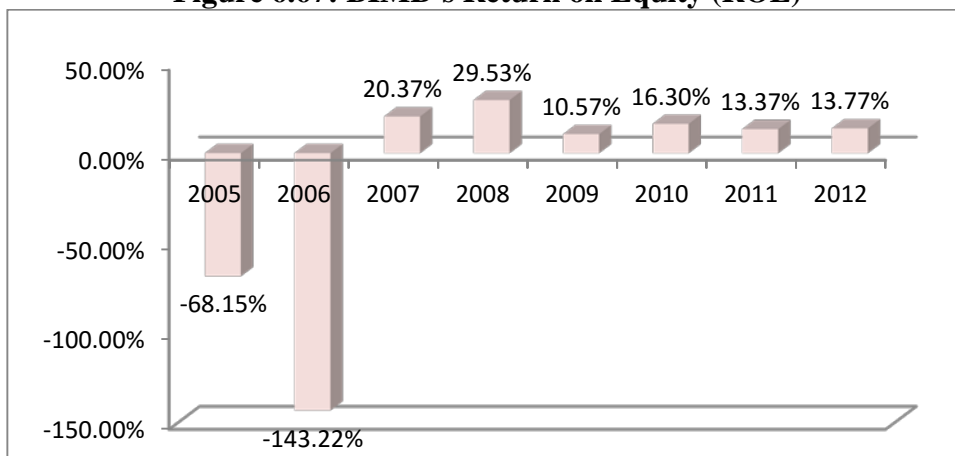
As per Figure 6.67, the trend for ROE is observed similar as the ROA. As the bank suffered a net loss in 2005 and 2006, the bank's ROE were also affected with -68.15% recorded in 2005 and -143.22% in 2006. The bank performance bounced bank in the

following year with 20.37%, and in 2008 recorded the highest point to date with 29.53%.

Figure 6.68: BIMB's Profit Expense Ratio (PER)
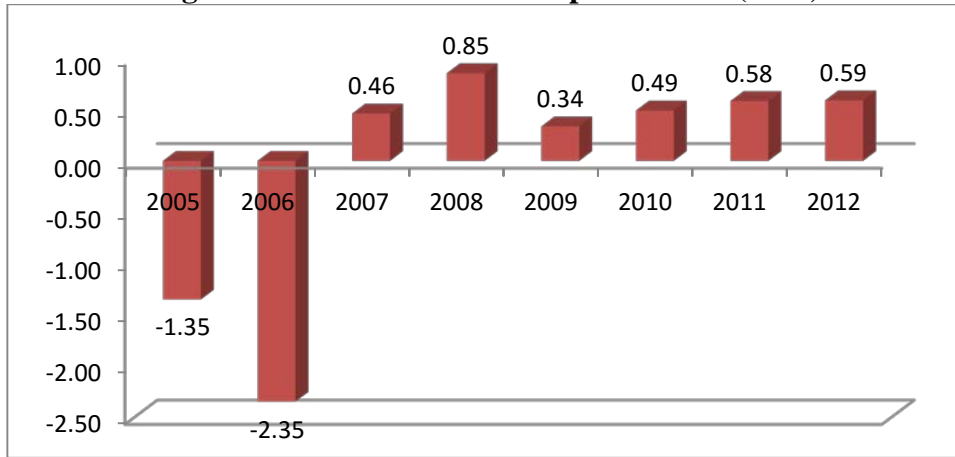
Based on Figure 6.68, 2008 remains the best performance in terms of profitability ratio for BIMB with the highest PER calculated at 0.85 and maintains the ratio around 0.4 to 0.6 between 2009 and 2012, which implies that every RM1 expense, the bank converts around RM0.40 to RM0.50 into profit.

Liquidity ratios

Figure 6.69: BIMB's Cash Deposit Ratio (CDR)
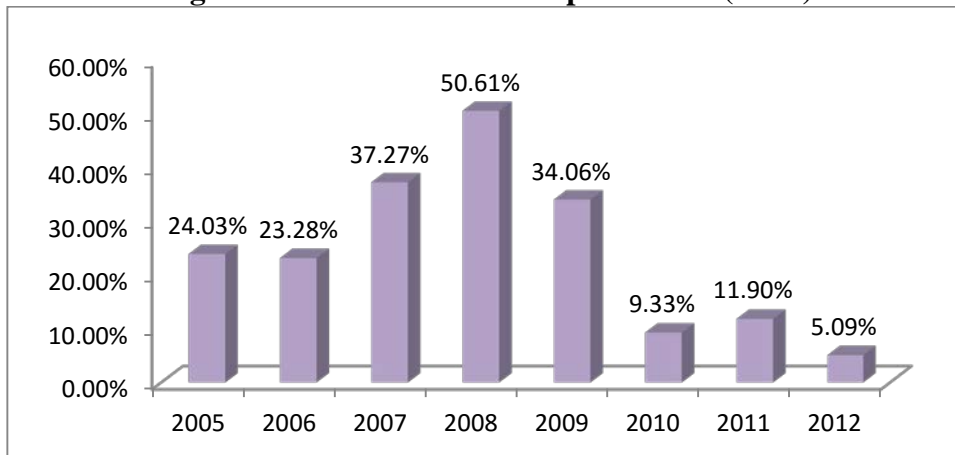
The CDR registered as increasing pattern between 2005 and 2008 before it moved in the opposite direction since 2008 until 2012 as per Figure 6.69. The highest CDR was in 2008 with 50.61% and recorded the lowest in 2012 with 5.09%.

Figure 6.70: BIMB's Loan Deposit Ratio (LDR)
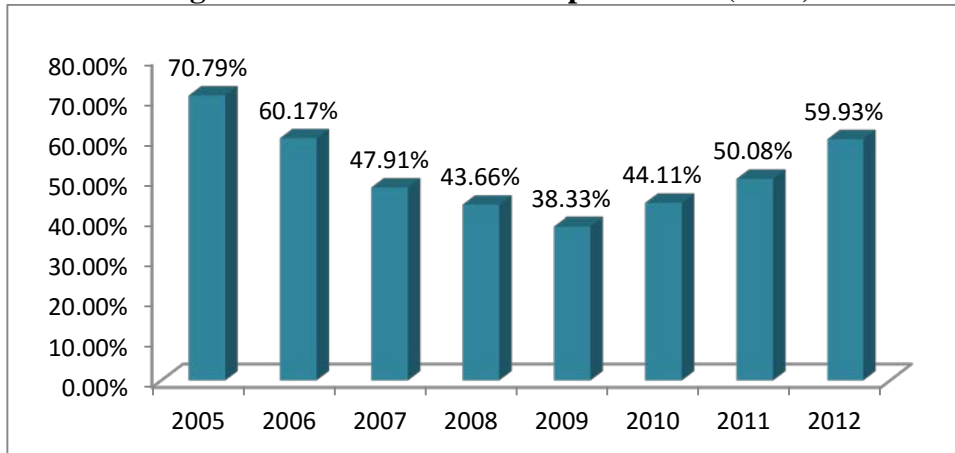
According to Figure 6.70, on average from 2005 to 2012, BIMB loans out 51.87% of total depositors' funds with the highest LDR in 2005 with 70.79%. The best score was reported in 2009 with 38.33%.

Figure 6.71: BIMB's Current Ratio (CR)
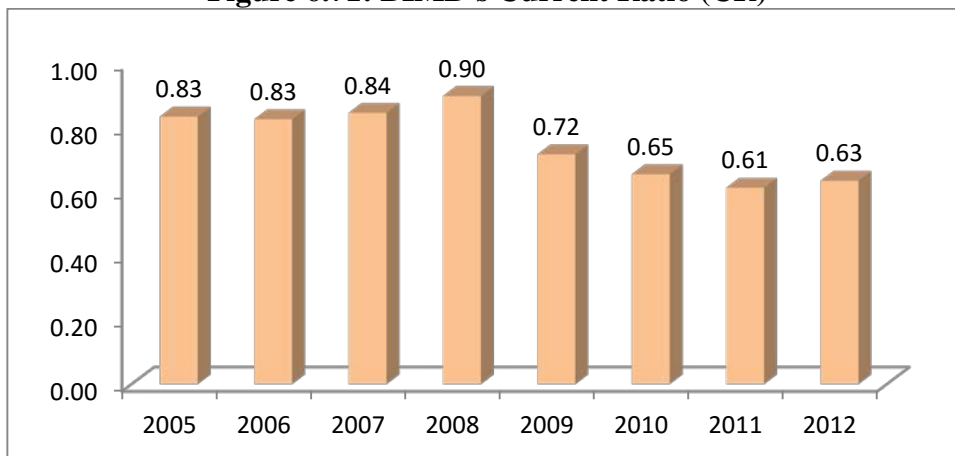
Figure 6.71 shows the bank has at least 61% of its current liabilities covered by current assets with the lowest recorded in 2011. The highest CR so far was in 2008 at 0.9. BIMB's liquidity position is not in solid position throughout the period whereby the optimum CR should be more than one.

Figure 6.72: BIMB's Current Assets Ratio (CAR)
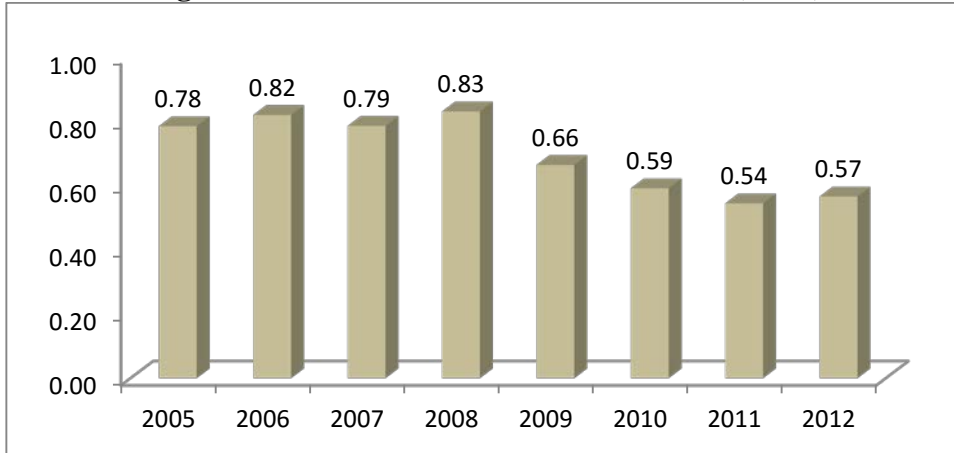
As for CAR, Figure 6.72 confirms that BIMB has the lowest ratio in 2011 with 0.54 and the highest in 2008 with 0.83. The latest figure displays that the bank's CAR calculated at 0.57. In terms of liquidity, BIMB maintained stable performance during the eight-year sample of operations.

Risk and solvency ratios

Figure 6.73: BIMB's Debt-to-Equity Ratio (D/E)
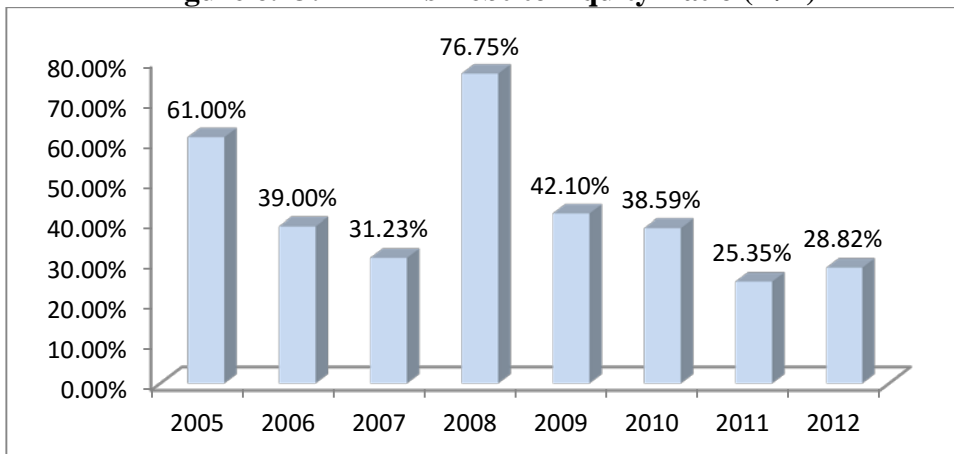
BIMB highest recorded D/E was in 2008 with 76.75%, and the lowest was in 2011 with 25.35% as shown in Figure 6.73. Overall, the bank's D/E illustrated inconsistent performance with the latest figure at 28.82%.

Figure 6.74: BIMB's Debt-to-Assets Ratio (DTAR)
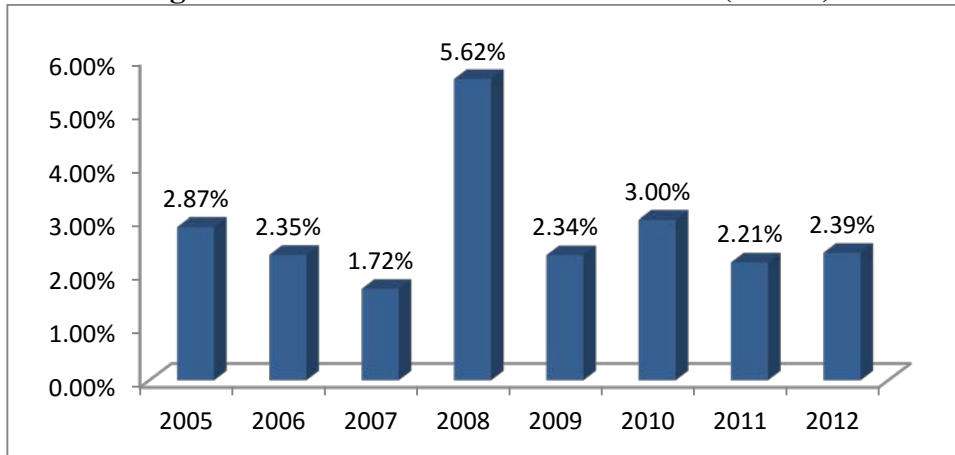
According to Figure 6.74, the bank's best-recorded DTAR was in 2007 with 1.72% that signifies the bank's ability to handle any financial impact, especially in loan losses and assets depreciation. The worst DTAR for BIMB was in the year of 2008 with 5.62%.

Figure 6.75: BIMB's Equity Multiplier (EM)
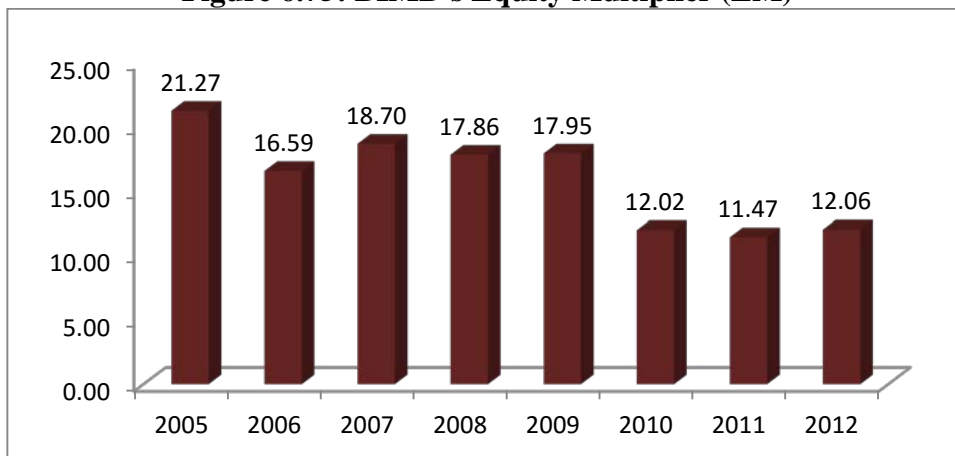
As for EM, Figure 6.75 shows a decreasing trend with the highest EM recorded in 2005. This can be translated as the bank's policy in acquiring assets at 21.27 times the value of the shareholders' equity, with high dependency on debt. The bank's lowest EM was in 2011 with 11.47.

Commitment to economy and Muslim community ratios

Figure 6.76: BIMB's Long-term Loan Ratio (LTA)
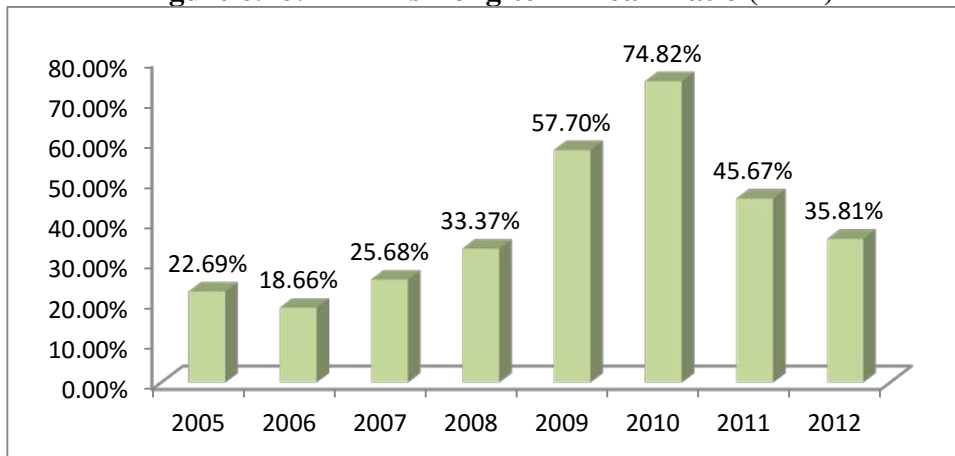
According to Figure 6.76, the bank supported a higher number of long-term projects in the 1990s. However, that was not the case between 2005 and 2008 with LTA recorded below 35%. The pattern shows an increasing trend and peaked in 2010 at 74.82% before it dropped again in 2011 and 2012.

Figure 6.77: BIMB's Government Bond Investment (GBD)
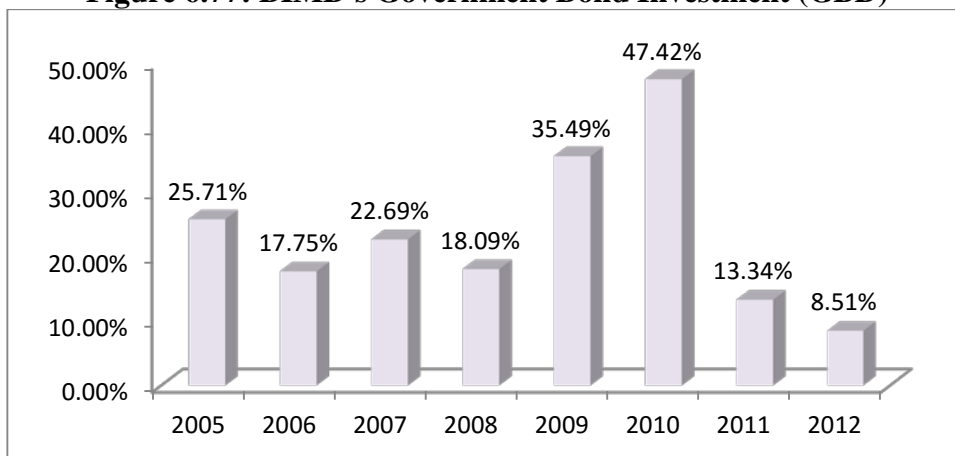
As per Figure 6.77, the bank invested heavily in government-related investments especially in 2010, whereby the bank invested 47.42% of its depositors' money. The least GBD of 8.51% computed in 2012. The investments are not inclusive of the statutory reserve requirements set by BNM, whereby all the banks in the country are required to place a certain percentage of eligible liabilities in cash reserves in BNM or related government-related money market instruments.

Figure 6.78: BIMB's *Mudarabah-Musharakah* Ratio (MM/L)
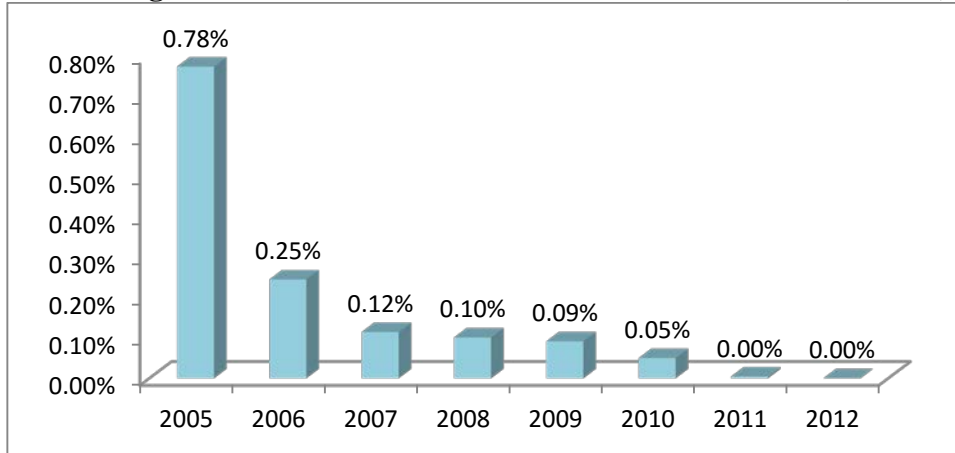
BIMB actively participated in giving out *mudarabah* and *musharakah* contracts during the initial years of their operations. However, according to Figure 6.78, the trend was in a decreasing mode from 0.78% in 2005 to 0% in 2011 and 2012. This is not a good sign especially for those who consider *mudarabah* and *musharakah* as the true essence of profit and loss sharing principles in Islamic finance as compared to other debt-based instruments allowed in *Shari'ah*.

General Reflections on the Financial Performance of Bank Islam Malaysia

BIMB's significant progress in profitability was during 1990 to 2012 even though it shows some fluctuations. One of the contribution factors towards the progressive growth is the action taken by the bank towards the involvement in higher risk investments. The liquidity position of BIMB indicated a stable movement of the eight-year sample. Meanwhile, bank performance of risk and solvency between 2005 and 2012 revealed that BIMB showed some cautious business decisions as measured in D/E, DTAR and EM, which decreased over the years. Meanwhile, the bank's contribution towards the economy and society showed an upward trend but eventually dropped during the later years of the bank' operation. The bank's involvement towards products related to *mudarabah* and *musharakah* showed a decreasing trend due to the availability of other alternative modes of financing that provide higher profit with less risk.

6.2.7 Bank Muamalat Malaysia Berhad (BMMB)

Profitability ratios

Figure 6.79: BMMB's Return on Assets (ROA)
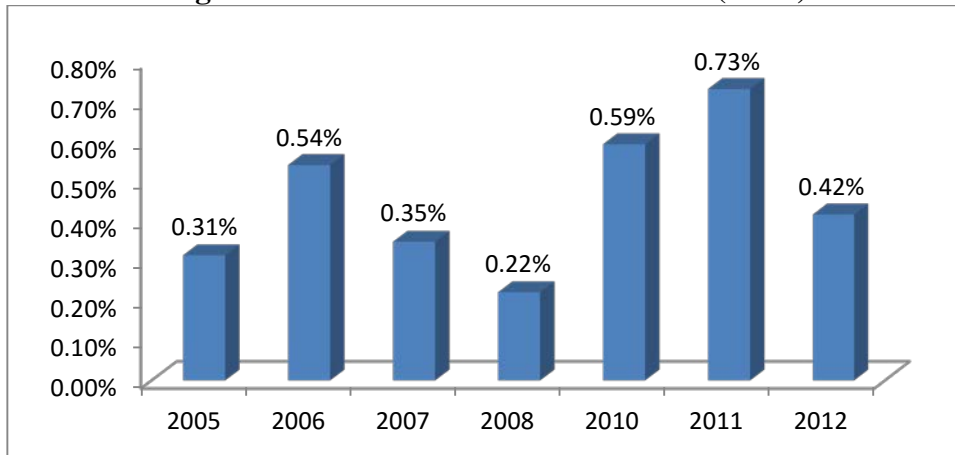
BMMB was the second full-fledged local Islamic bank operated in Malaysia and was established in 1999. It is also important to note that the bank changed their financial year end from 31st December to 31st March starting 2010 hence explaining the absence of 2009 data in the sample. The bank recorded the lowest ROA throughout the eight-year sample in 2004 with 0.22% as depicted in Figure 6.79. In contrast, the bank performed the best in 2011 with 0.73%.

Figure 6.80: BMMB's Return on Equity (ROE)
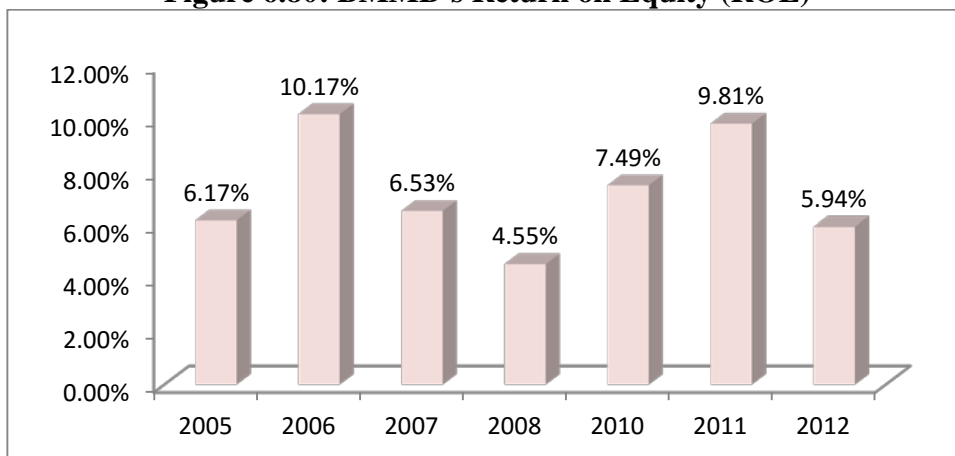
Similar to ROA, the bank's ROE has twice endured up-and-down trends throughout 2005 to 2012. As depicted in Figure 6.80, the best ROE was recorded in 2006 with 10.17%, while the lowest was in 2008 at 4.55%.

Figure 6.81: BMMB's Profit Expense Ratio (PER)
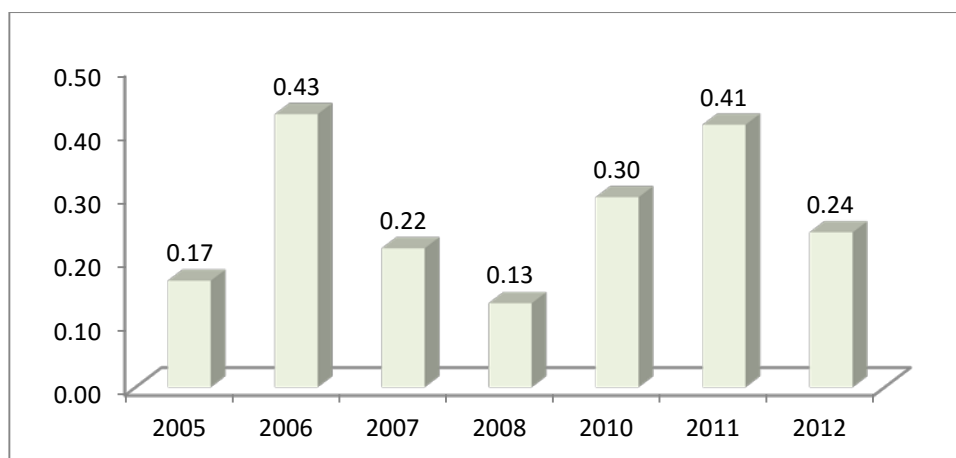
The bank's PER averaged at 0.27 with the highest point in 2006 at 0.43. Meanwhile, the bank's recent PER were recorded at 0.30, 041 and 0.24 for the year of 2010, 2011 and 2012 respectively as shown in Figure 6.81. The average 0.27 signifies that the bank earned RM0.27 profit from every RM1 expenditure the bank made.

Liquidity ratios

Figure 6.82: BMMB's Cash Deposit Ratio (CDR)
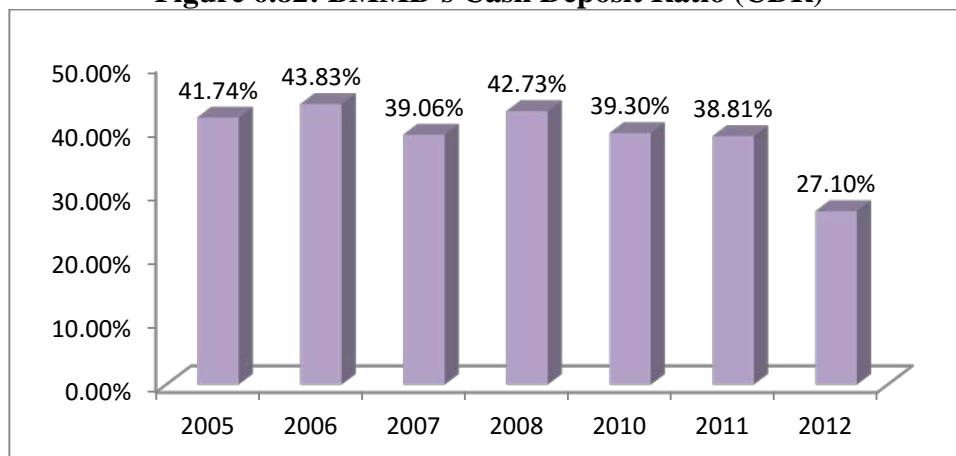
As for CDR, the bank recorded a declining pattern from 2005 to 2012. Based on Figure 6.82, it started off with 41.74% in 2005 and increased to 43.83% in 2006. BMMB maintains the lowest ratio of 27.10% of its depositors' funds in cash forms in 2012.

Figure 6.83: BMMB's Loan Deposit Ratio (LDR)
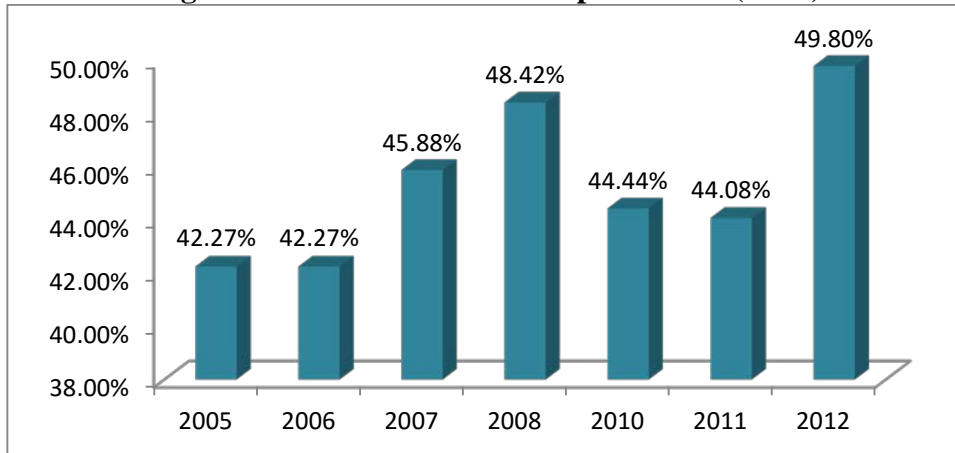
As depicted in Figure 6.83, the bank hardly channels 50% of its depositors' funds to borrowers. The best reported LDR were in 2005 and 2006 at 42.27%. The ratio worsens each year and increased as high as 48.42% in 2008. The year 2009 and 2010 indicate a slight improvement to 44% before jumped back to 49.80% in 2012.

Figure 6.84: BMMB's Current Ratio (CR)
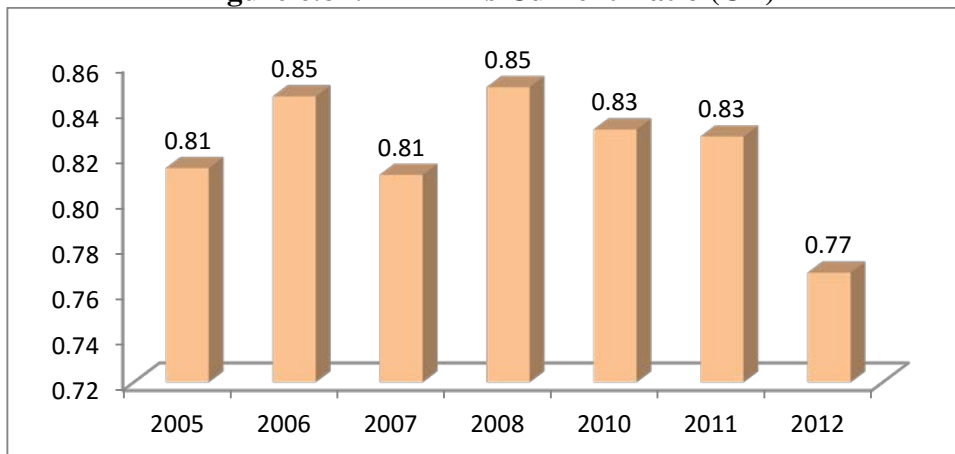
In terms of CR, the bank has an average of 0.82 with above average performance in 2006 with 0.85 and again between 2008 and 2011 with 0.85, 0.83 and 0.83 respectively. As per Figure 6.84, the lowest CR was in 2012 at 0.77. Overall, the bank failed to pass at least one-mark of CR during the seven-year observations, which is considered poor.

Figure 6.85: BMMB's Current Assets Ratio (CAR)
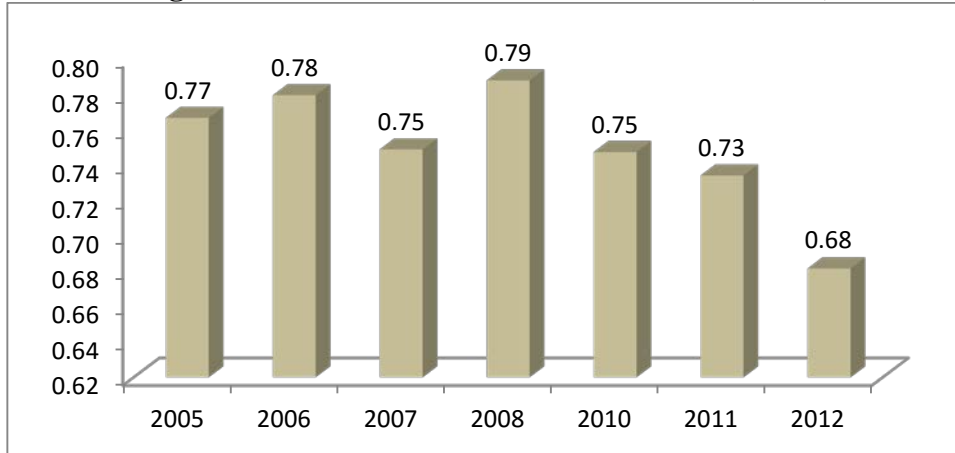
Based on Figure 6.85, BMMB keeps a minimum of 68% of its total assets in more liquid forms between 2005 and 2012 with the highest at 0.79 in 2008. The lowest CAR of 0.68 is calculated in 2012.

Risk and solvency ratios

Figure 6.86: BMMB's Debt-to-Equity Ratio (D/E)
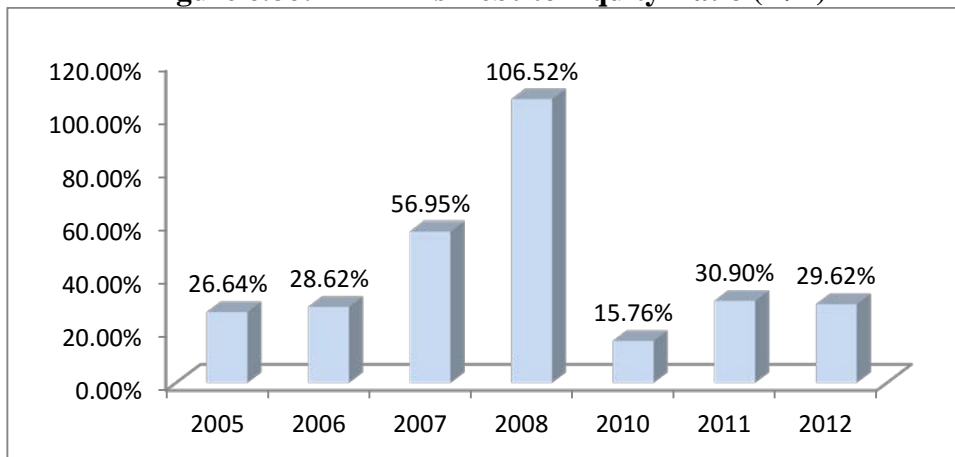
According to the 2010 annual report, the bank is at the best period of absorbing any financial impact with D/E of 15.76%. The worst D/E was in 2008 at 106.52%. Overall, the bank maintains a respectable D/E ratio as shown in Figure 6.86.

Figure 6.87: BMMB's Debt-to-Assets Ratio (DTAR)
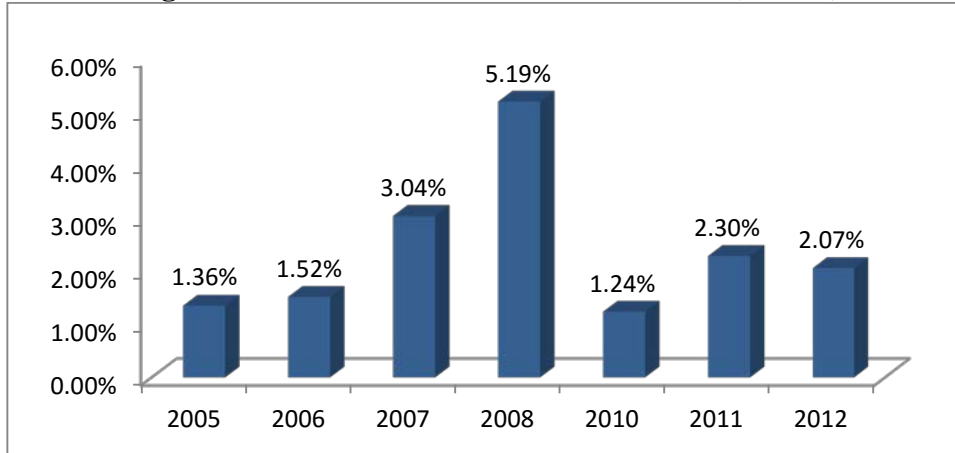
As for DTAR, Figure 6.87 denotes that the highest point was achieved in 2008 with 5.19% and the lowest in 2010 with 1.24%. In 2012, the bank's DTAR was 2.07%. In conclusion, the bank is less involved in risky business.

Figure 6.88: BMMB's Equity Multiplier (EM)
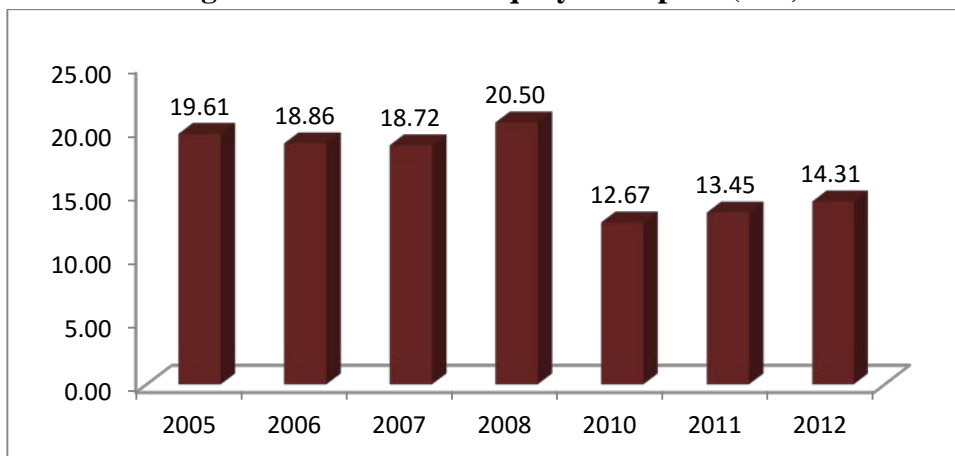
As depicted in Figure 6.88, the bank is highly dependent on debt to procure their assets with EM averaged at 16.88 within the period of 2005 to 2012. The maximum EM was recorded in 2008 with 20.50 while the minimum was in 2010 at 12.67. Within the 15 years period of operation, there was a minimal movement towards the EM.

Commitment to economy and Muslim community ratios

Figure 6.89: BMMB's Long-term Loan Ratio (LTA)
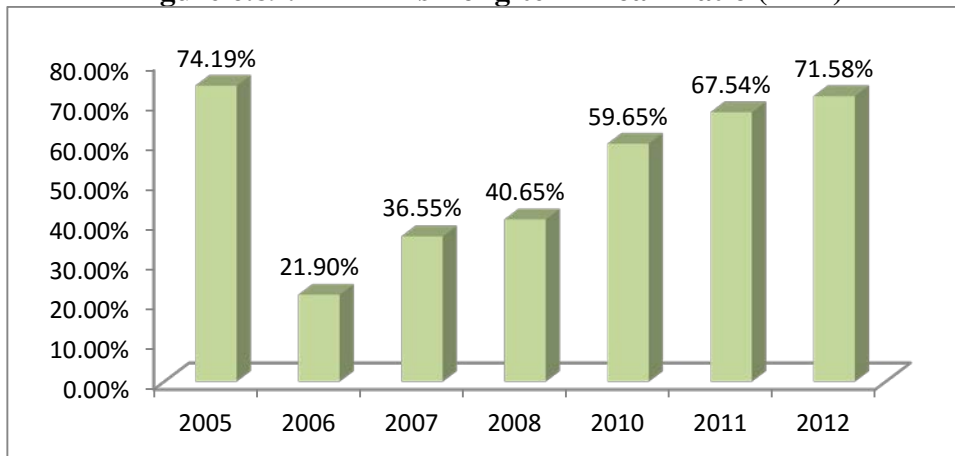
By referring to Figure 6.89, the bank is actively supporting long-term projects with the highest LTA was at 74.19% in 2009, and the lowest was in the following year at 21.90%. The ratio keeps on improving since with the latest of 71.58% in 2012.

Figure 6.90: BMMB's Government Bond Investment (GBD)
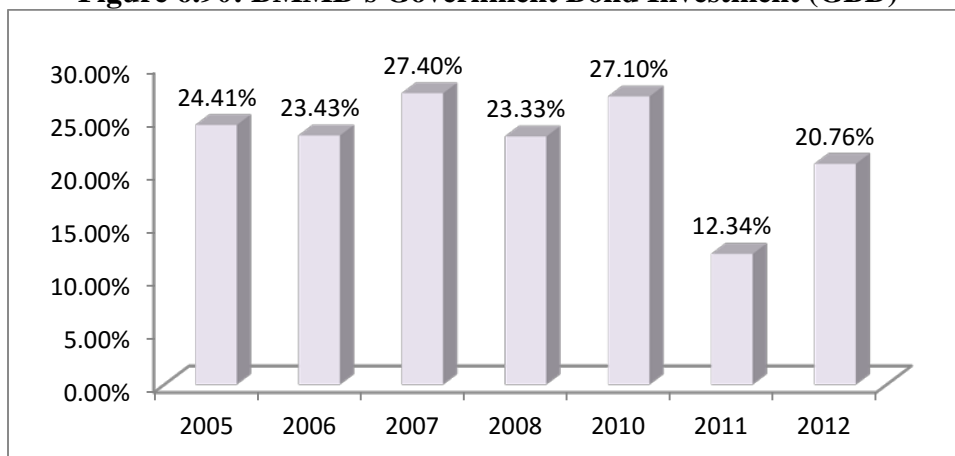
As shown in Figure 6.90, the bank is taking a less risky approach in terms of investing their depositors' funds by spending on average 22.68% in Government bonds. The highest calculated GBD was in 2007 at 27.40% and remain consistent until 2010. The year 2011 showed a drastic drop to 12.34% from 27.10% in the previous year. The GBD increased in the following year, and the recent report showed the bank's GBD at 20.76%.

Figure 6.91: BMMB's *Mudarabah-Musharakah* Ratio (MM/L)
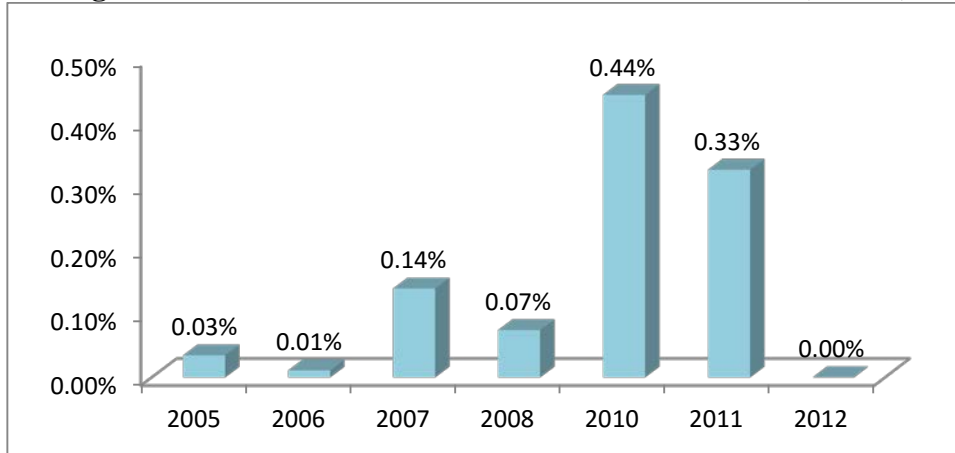
Based on Figure 6.91, it can be seen that the bank's MM/L was at the peak in 2010 with 0.44% and the lowest at 0% in 2012. This rate is small considering BMMB is the second Islamic bank offering Islamic products to customers.

General Reflections on the Financial Performance of Bank Muamalat

BMMB's initial performance during commencement in terms of profitability looks promising. However, as the bank expands its operation, the profit generated has decreased accordingly and was badly hit in 2004. This situation is reflected in its ROA, ROE, and PER. However, they managed to recover and consistently improve since then until the recent financial year. The bank maintained a stable liquidity position particularly CDR and LDR which indicated a decent ratio. It was noted that BMMB operated in a less risky environment except for some years that showed a high ratio. In addition, the ratio calculated towards the bank's commitment towards the economy and Muslim society reported positive efforts taken by the bank in expanding the banking sector. The change was evident in the LTA that shows an increasing pattern. However, their MM/L is in a declining state whereby 0% recorded in 2012 after they logged some transactions before that.

6.2.8 CIMB Islamic Bank Berhad (CIMB Islamic)

Profitability ratios

Figure 6.92: CIMB Islamic's Return on Assets (ROA)
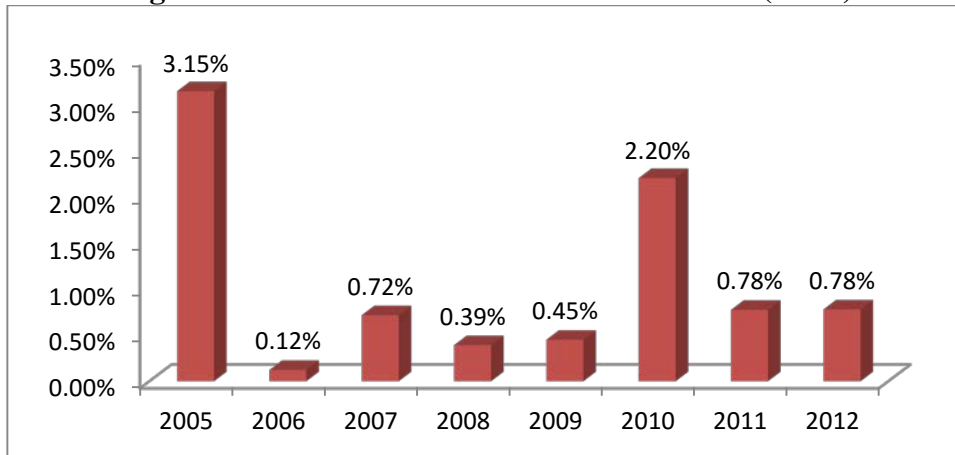
CIMB is the second largest bank in Malaysia and launched its Islamic subsidiary in 2005. According to Figure 6.92, the highest ROA was reported in their first financial year at 3.15% but slumped to the lowest point in the following year at 0.12%. The bank's performance were slightly improved in 2007 at 0.72% but did not manage to sustain the performance in the following years of operation which resulted in the ROA in 2008 to drop to 0.39%. In 2010, the bank's ROA recorded at 2.20%. For the recent two fiscal years, CIMB Islamic's ROA was 0.78% each.

Figure 6.93: CIMB Islamic's Return on Equity (ROE)
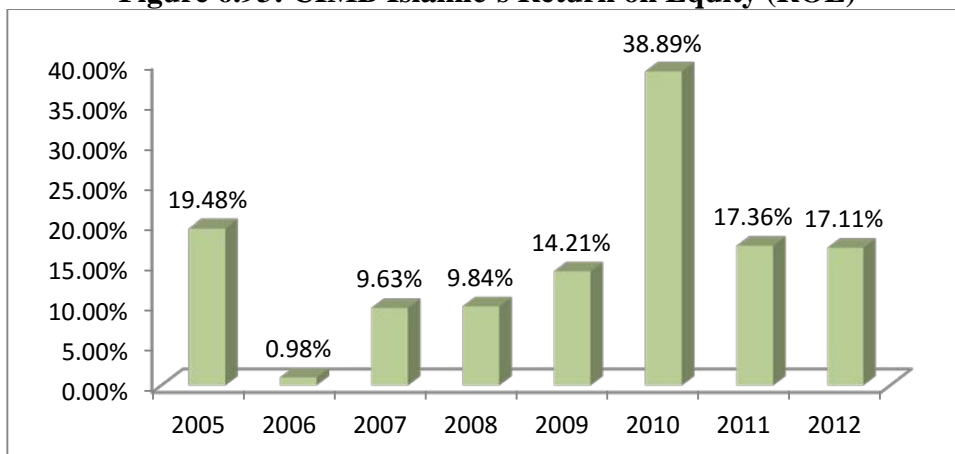
Based on Figure 6.93, the same trend reflected in ROE with 19.48% in 2005 and dropped to 0.98% in 2006. The year 2007 onwards indicate an upward movement trend

with the highest result showed in 2010 with 38.89%. The bank's ROE for 2011 and 2012 is at 17.36% and 17.11% respectively. Overall, the bank converted 15.94% of its shareholders' equity into profit between 2005 and 2012.

Figure 6.94: CIMB Islamic's Profit Expense Ratio (PER)
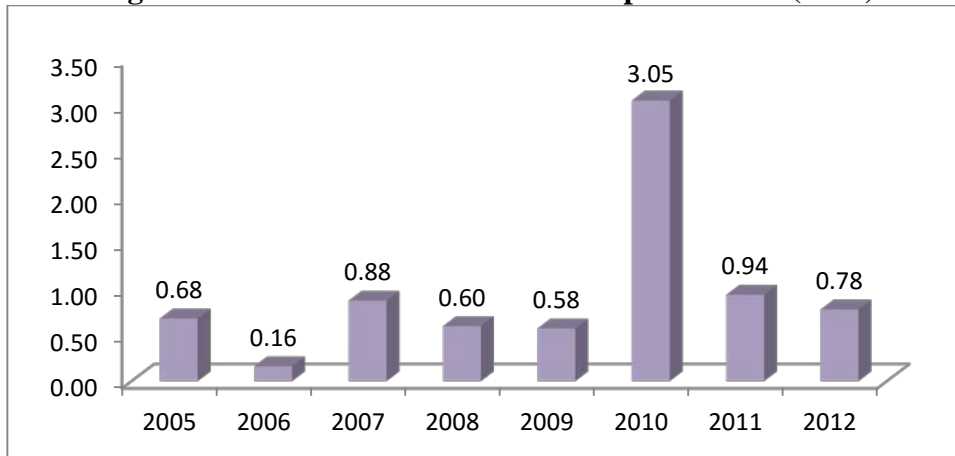
As per Figure 6.94, the bank averaged 0.96 with the maximum efficiency level achieved in 2010 at 3.05. The minimum score was calculated at 0.16 in 2006. Generally, the bank's PER is in a consistent trend with the exception of 2006 and 2010.

Liquidity ratios

Figure 6.95: CIMB Islamic's Cash Deposit Ratio (CDR)
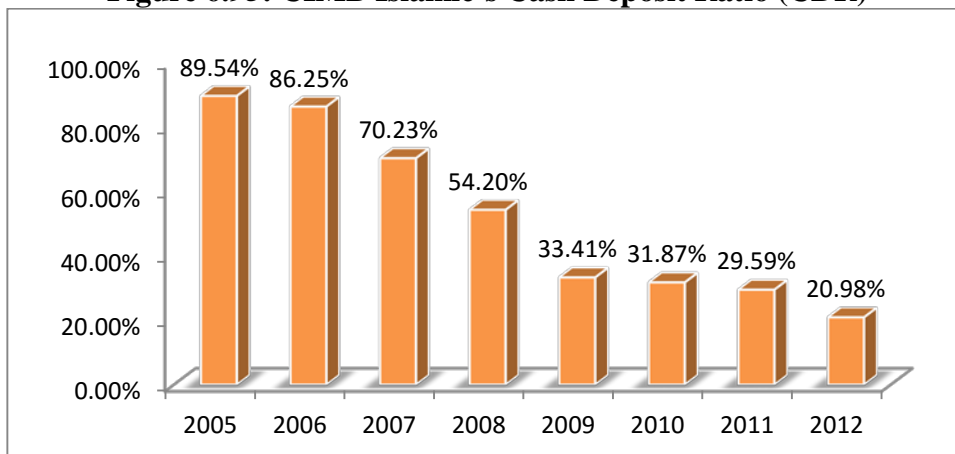
The CDR displayed a declining trend with the highest point at 89.54% in 2005 and reduced slightly in 2006 to 86.25% as presented in Figure7.95. The CDR continues to drop with the latest of 20.98% in 2012. This indicates that the bank is reducing the cash available to its depositors by channelling it to the bank's borrowers.

Figure 6.96: CIMB Islamic's Loan Deposit Ratio (LDR)
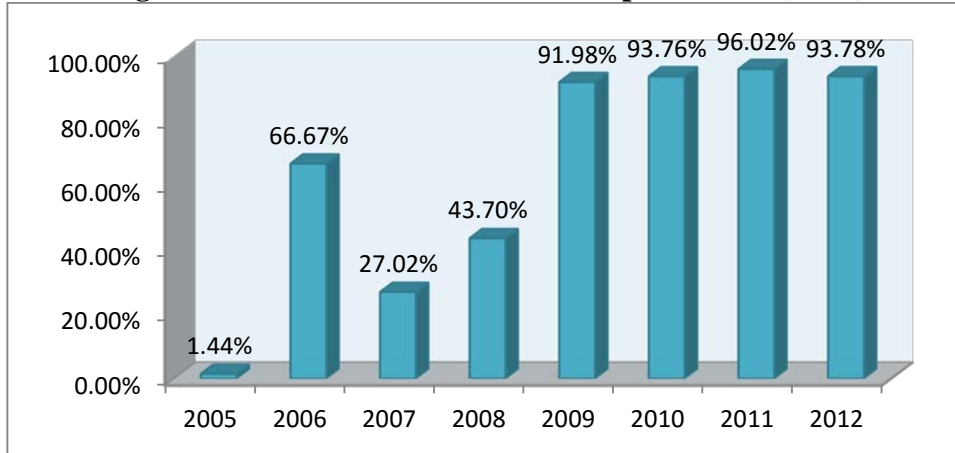
In terms of LDR, the most favoured score was reported in their first year of operation in 2005 at 1.44% as per Figure 6.96. The ratios increased significantly starting 2009 with the highest ratio recorded in 2011 at 96.02%.

Figure 6.97: CIMB Islamic's Current Ratio (CR)
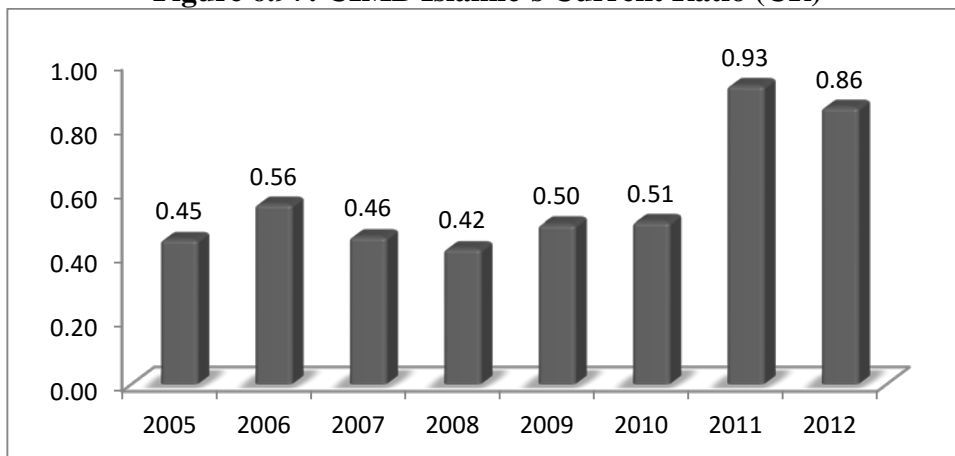
The bank's CR was at the lowest point in 2008 with 0.42 and the highest in 2011 with 0.93. During the eight-year period, CIMB Islamic maintains the CR accordingly apart from a slight dropped in 2008 and increased significantly in 2011 and 2012. The bank's CR for the latest two years as Figure 6.97, are considered better than its first six-year operations. However, it is still deemed less ideal, since its CRs never moved above one.

Figure 6.98: CIMB Islamic's Current Assets Ratio (CAR)
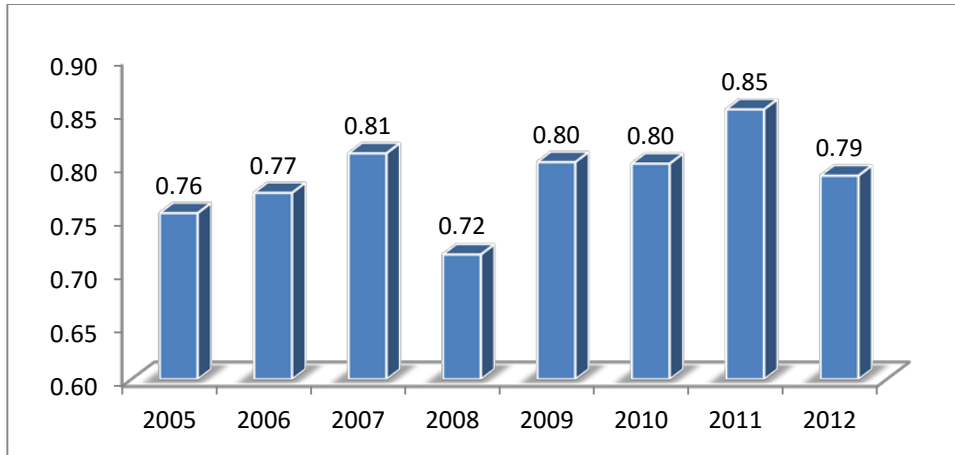
As depicted in Figure 6.98, CIMB Islamic maintains its assets in more liquid forms of at least 0.72 marks, which was reported in 2008. The maximum CAR was noted at 0.85 in 2011 with the latest CAR in 2012 was calculated at 0.79. On average, CIMB Islamic keeps 79% of its assets in liquid types.

Risk and solvency ratios

Figure 6.99: CIMB Islamic's Debt-to-Equity Ratio (D/E)
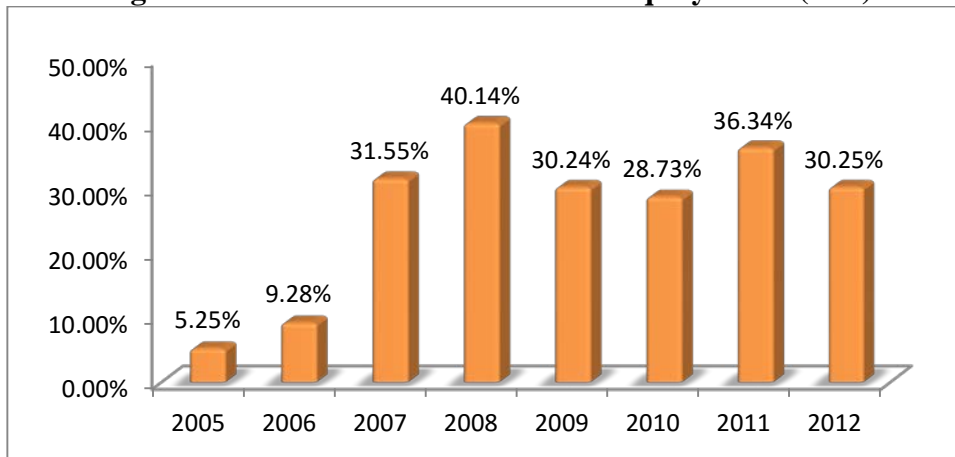
The highest D/E was calculated in 2008 at 40.14%, which signifies that the bank is at greater risk of absorbing financial impact. The bank's best D/E was recorded in 2005 with 5.25%. Overall, Figure 6.99 shows that the bank's D/E was in an increasing trend from 2005 to 2012.

Figure 6.100: CIMB Islamic's Debt-to-Assets Ratio (DTAR)
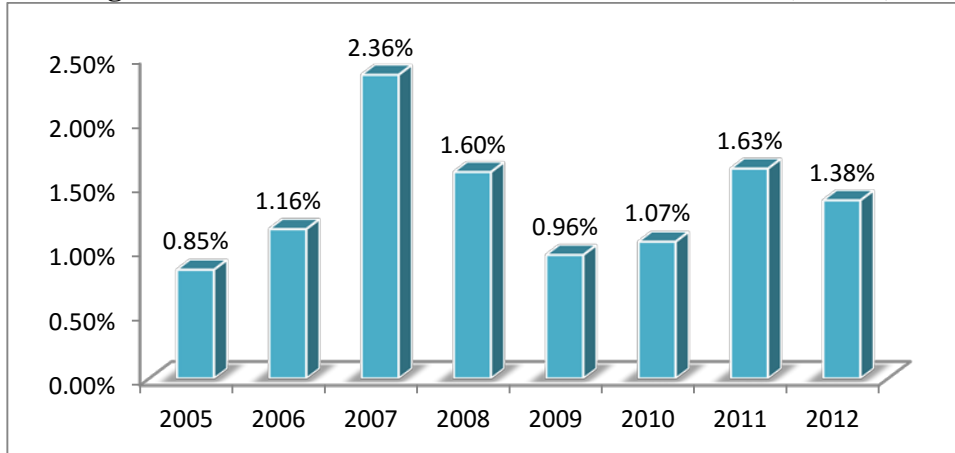
As per Figure 6.100, the bank's DTAR peaked in 2007 at 2.36%, and the lowest was in 2005 with 0.85%. Since 2007, the bank's DTAR was in a decreasing pattern before it rose again in 2011 to 1.63%.

Figure 6.101: CIMB Islamic's Equity Multiplier (EM)
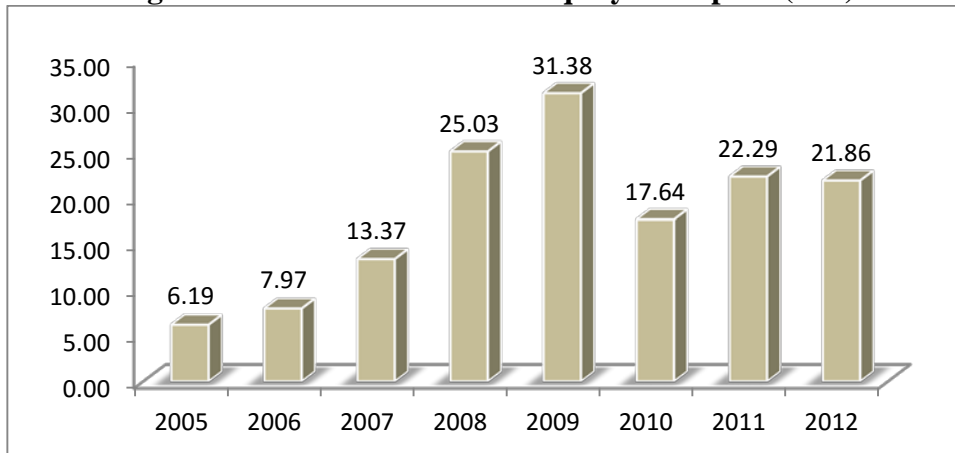
Like most of the banks, CIMB Islamic utilises debt in securing the purchases of assets with the increasing trend of EM until 2009. It started at 6.19 in their first year of business and achieved the highest point in 2009 at 31.38. The bank's EM reduced to 17.64 in 2010, and the latest EM is at 21.86. The trend can be seen in Figure 6.101.

Commitment to economy and Muslim community ratios

Figure 6.102: CIMB Islamic's Long-term Loan Ratio (LTA)
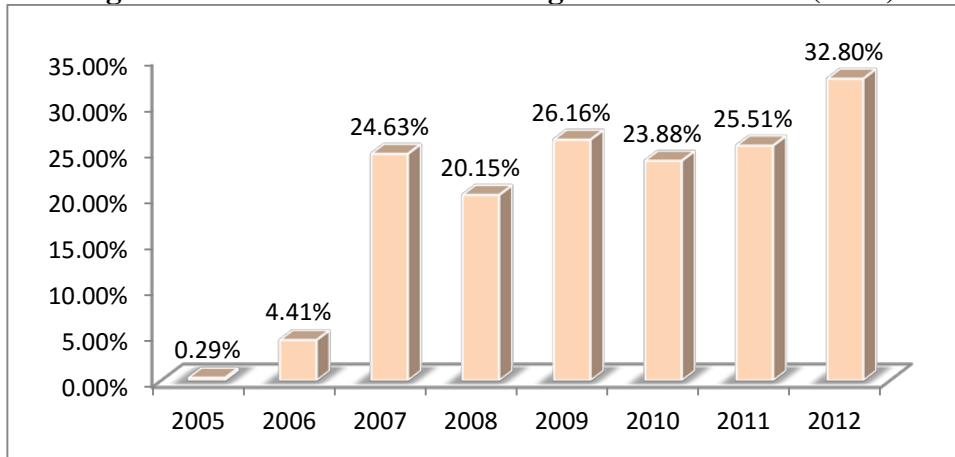
As per Figure 6.102, in 2005, the bank's LTA was at 0.29% and increased to 4.41% in 2006. Since 2007, the bank recorded double-digit figures for their LTA with 24.63% in 2007 and 20.15% in 2008. As of the latest report, the LTA was at 32.80%.

Figure 6.103: CIMB Islamic's Government Bond Investment (GBD)
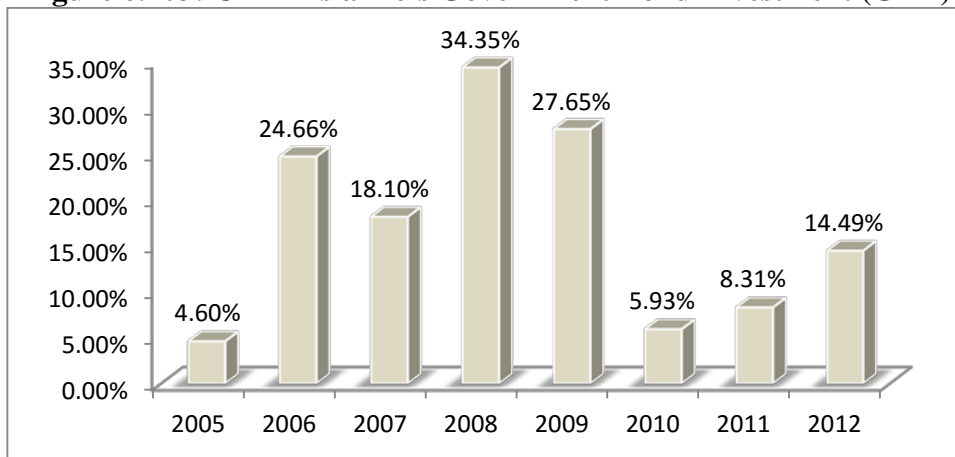
Figure 6.103 denotes the inconsistent trend of the bank's investment in government investments. The bank started to invest in government-linked investments in their first year of operation with 4.60% and significantly increased to 24.66% in their second year of operation. The bank's investment slightly dropped to 18.10% in 2007 and improved substantially in 2008 with 34.35%. Based on the 2012 report, the GBD was calculated at 14.49%.

Figure 6.104: CIMB Islamic's *Mudarabah-Musharakah* Ratio (MM/L)
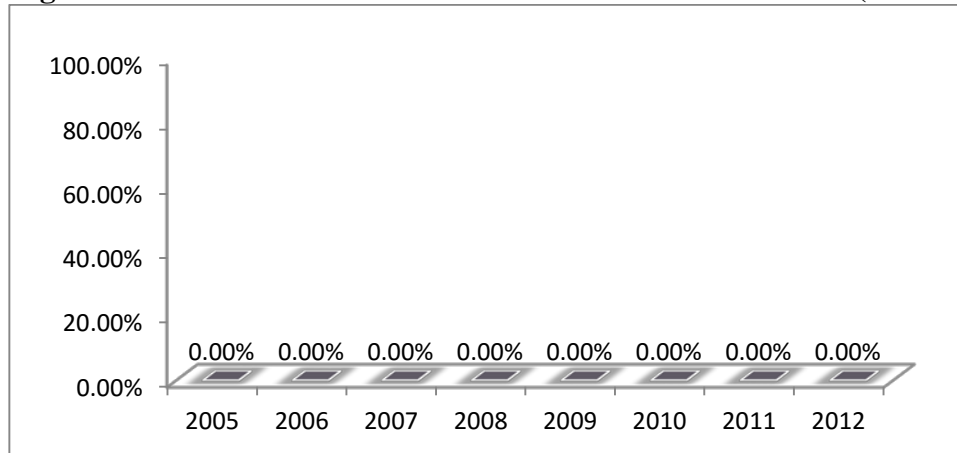
Based on Figure 6.104, there were no transactions involving *mudarabah* and *musharakah* since the beginning of CIMB Islamic's operation until the end of the 2012 financial year.

General Reflections on the Financial Performance of CIMB Islamic

CIMB Islamic started strong in 2005 with the highest profitability achieved compared to the remaining years. As the bank continued its operation, the profit achieved faced a declining trend. However, the bank managed to improve its performance in 2010 as revealed in the ROA, ROE, and PER, even though their profitability reduced in 2011 and 2012. Meanwhile, the bank sustained a stable liquidity position in particular for CR and CAR. This result showed that the bank had more liquid assets to use for its business requirements. As the bank is expanding throughout its years of operation, CIMB Islamic investment is involved in riskier business activities. Hence, the risk and solvency ratios showed an upward movement trend during the five-year period. Meanwhile, CIMB Islamic investment in long-term development project has increased since its commencement in 2005. In relation to the *mudarabah* and *musharakah* products, CIMB Islamic has yet to provide any contribution to the economy and Islamic community.

6.2.9 Hong Leong Islamic Bank Berhad (HLIB)

Profitability ratios

Figure 6.105: HLIB's Return on Asset (ROA)
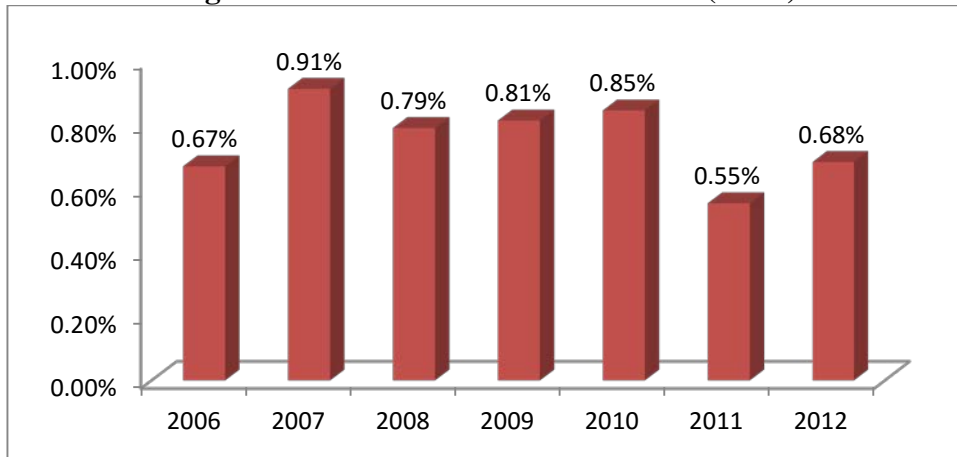
Figure 6.106: HLIB's Return on Equity (ROE)
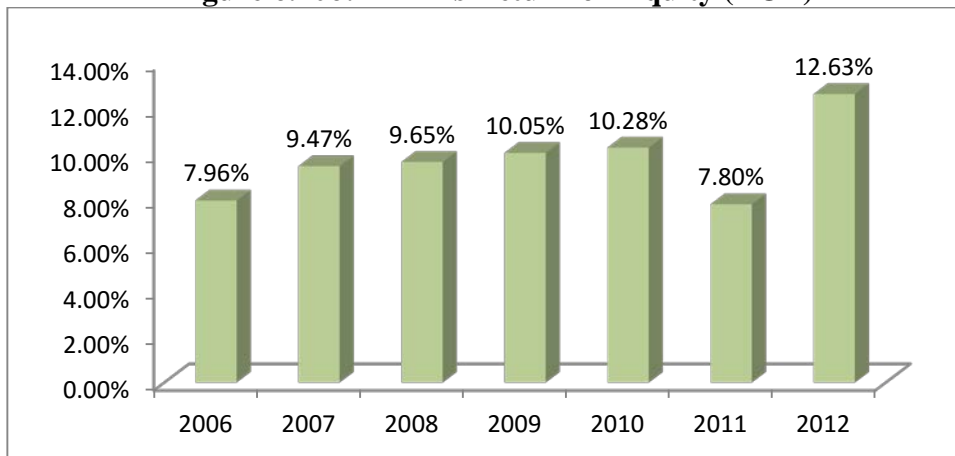
Figure 6.107: HLIB's Profit Expense Ratio (PER)
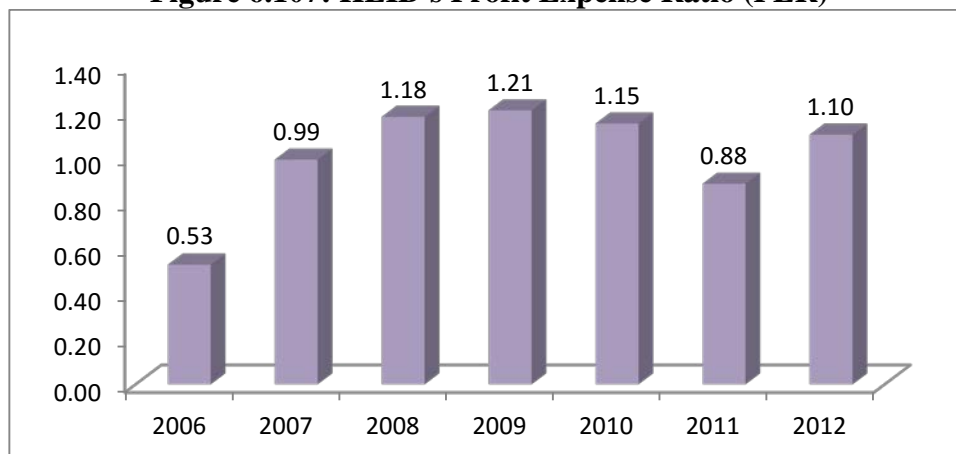
As depicted in Figure 6.105, HLIB's ROA in 2006 was 0.67% and subsequently increased to 0.91% in 2007. However, due to a drop in its profitability in 2008, it has affected the ROA to reduce to 0.79% but eventually managed to increase to 0.81% and 0.85% in 2009 and 2010 respectively. Meanwhile, both ROE and PER had continuous growth for the seven-year period as indicated in Figure 6.106 and Figure 6.107 accordingly. The ROE was at 7.96% in 2006 and continued to increase each year ending at 12.63% in 2012. Meanwhile, the highest PER was achieved in 2009 at 1.21 in 2009 as compared to 0.53 in 2006.

Liquidity ratios

Figure 6.108: HLIB's Cash Deposit Ratio (CDR)
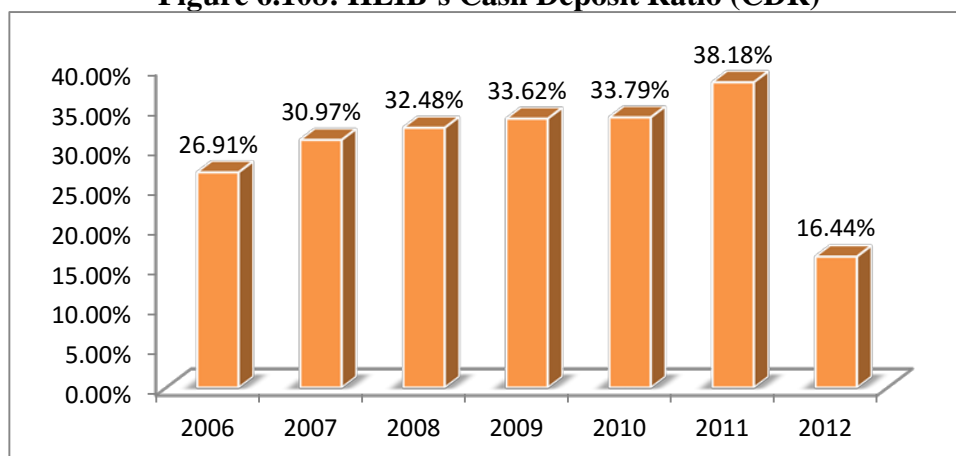
Figure 6.108 until Figure 6.111 denote the liquidity ratios for HLIB, which showed a mixed performance between 2006 and 2012. CDR showed an improvement from

26.91% in 2006 increased up to around 34% in 2009 and 2010. Their CDR was at the highest point in 2011 at 38.18% before plummeting to 16.44% in 2012.

Figure 6.109: HLIB's Loan Deposit Ratio (LDR)
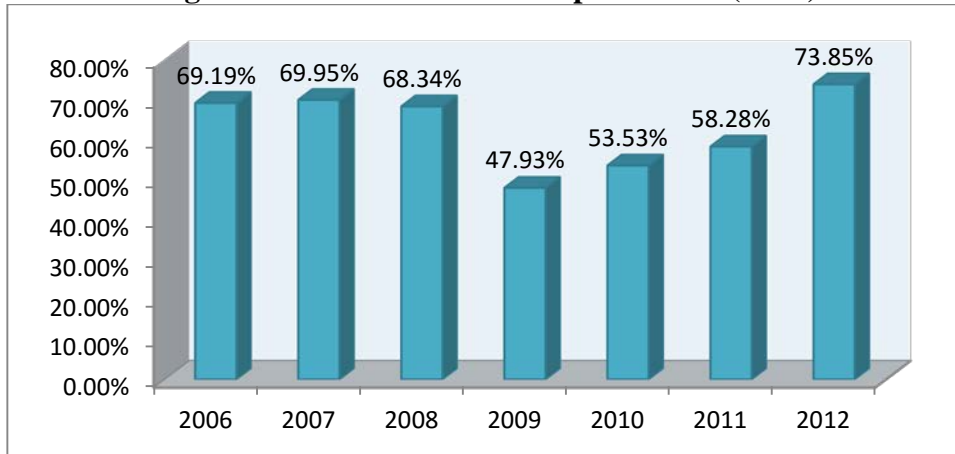
As can be seen in Figure 6.109, LDR maintained a stable pattern at around the 70% mark from 2006 to 2008. It later improved to 47.93% in 2009 but worsened to 53.53%, 58.28% and 73.85% for 2010, 2011 and 2012 respectively. The declining growth from the customers' deposit contributed the reducing trend for both the CDR and LDR ratios.

Figure 6.110: HLIB's Current Ratio (CR)
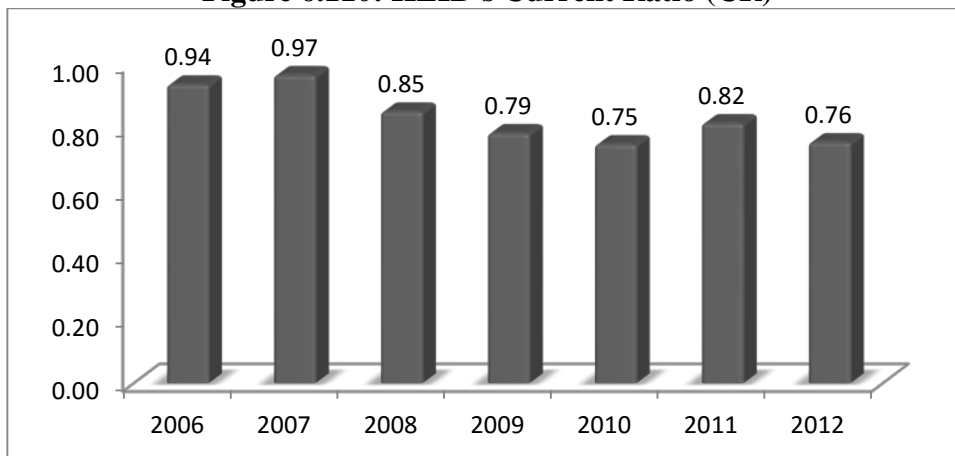
As per Figure 6.110, CR was at the highest in 2007 at 0.97 and dropped subsequently each year to 0.85, 0.79 and 0.75 in 2008, 2009 and 2009 respectively. HLIB never achieved at least one-mark between 2006 and 2012.

Figure 6.111: HLIB's Current Asset Ratio (CAR)
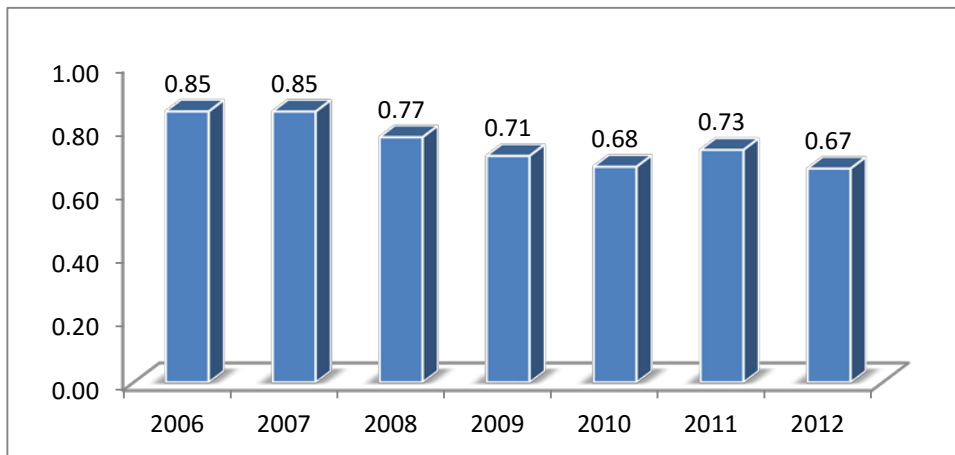
CAR was at the highest in 2006 at 0.85 and gradually decreased each year to the lowest at 0.67 in 2012 as depicted in Figure 6.111.

Risk and solvency ratios

Figure 6.112: HLIB's Debt-to-Equity Ratio (D/E)
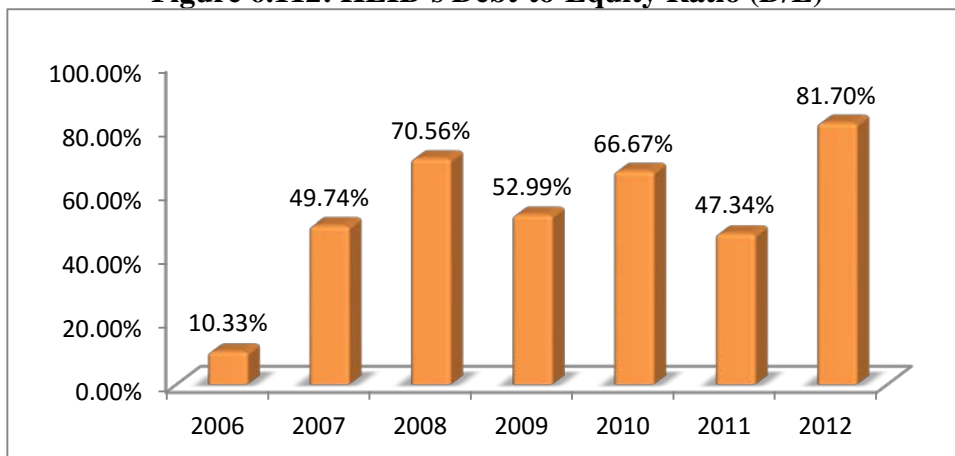
The bank's performance of risk and solvency from 2006 to 2012 are measured in D/E, DTAR and EM whereby it point towards a worsening trends over the years. All three ratios have a similar pattern with a slight drop in 2009 and gradually increased until 2012. According to Figure 6.112, D/E was at 10.33% in 2006 and increased to 49.74 in 2007. In 2008, the number further rose to 70.56% but decreased to 52.99% in 2009. The latest result showed the D/E calculated at 81.7%.

Figure 6.113: HLIB's Debt to Total Asset Ratio (DTAR)
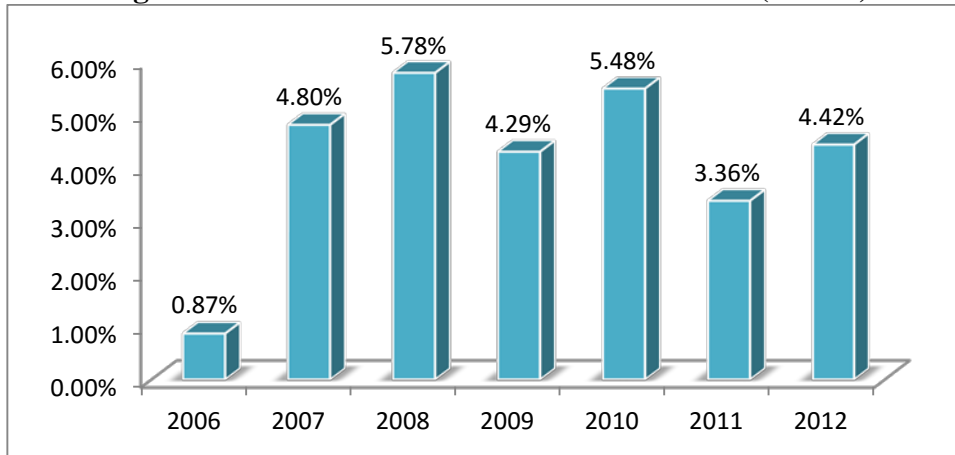
As per Figure 6.113, HLIB's DTAR was at the lowest in 0.87% in 2006 and maintained the ratio below 6% between 2007 and 2012.

Figure 6.114: HLIB's Equity Multiplier (EM)
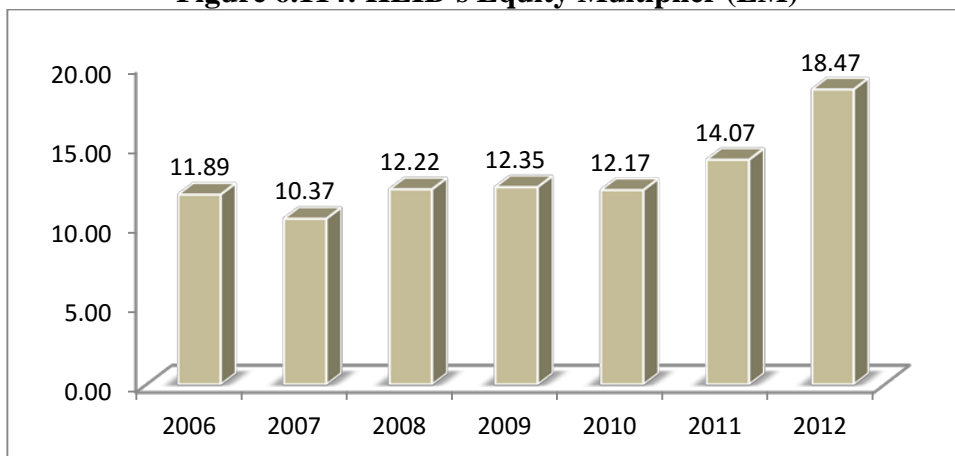
Within the seven-year period, EM was at the highest in 2012 at 18.47 and the lowest at 10.37 in 2007 as depicted in Figure 6.114. This shows that the bank became more dependent on debt to finance its assets each year.

Commitment to economy and Muslim community ratios

Figure 6.115: HLIB's Long-term Loan Ratio (LTA)
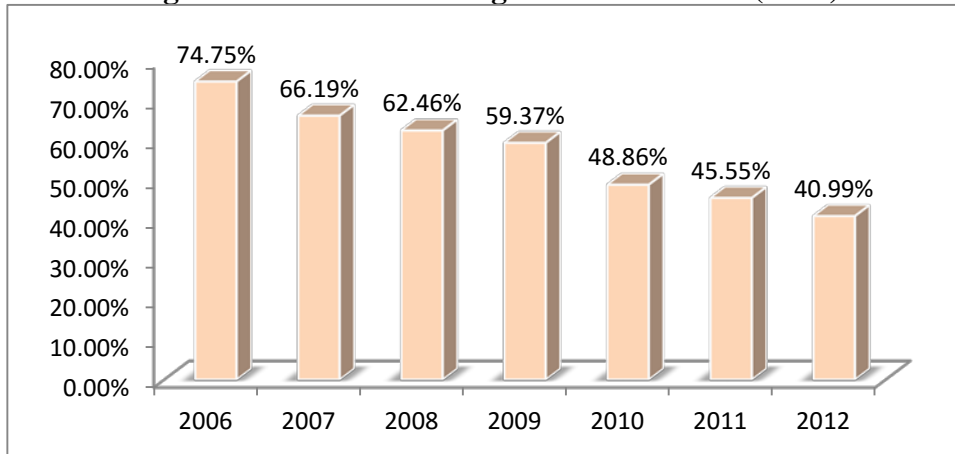
The calculated LTA as per Figure 6.115 shows a decrease in HLIB's long-term development project for the seven-year period. The year 2006 was the highest commitment at 75% but faced a declining trend between 2007 and 2012 at 66%, 62%, 59, 49%, 46% and 41% respectively.

Figure 6.116: HLIB's Government Bond Investment (GBD)
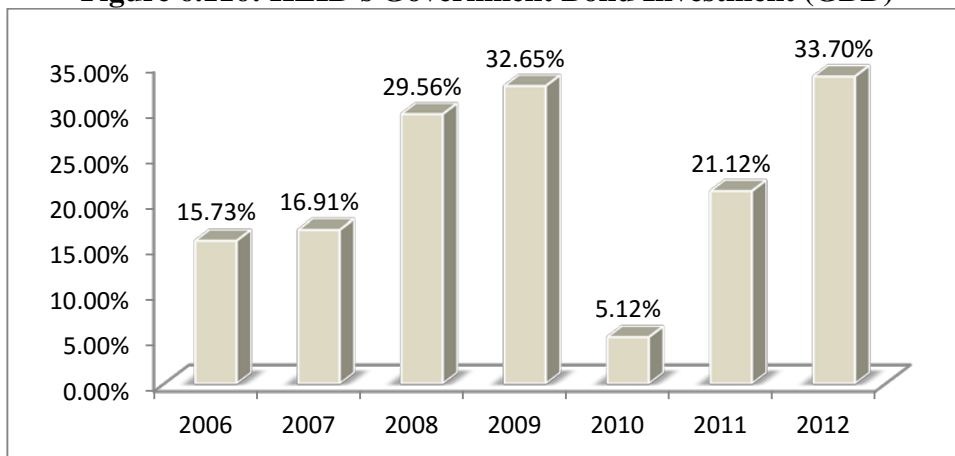
Figure 6.116 shows that a different pattern occurs for GBD where it illustrates an upward trend since 2006 at 16% up to 33% in 2009 but suddenly dropped to 5.12% in 2010. The ratio was on the rise again with 21.12% in 2012 and 33.70%. Overall, it shows that the bank's preference in lower risk of GBD increased between 2006 and 2012.

Figure 6.117: HLIB's *Mudarabah-Musharakah* Ratio (MM/L)
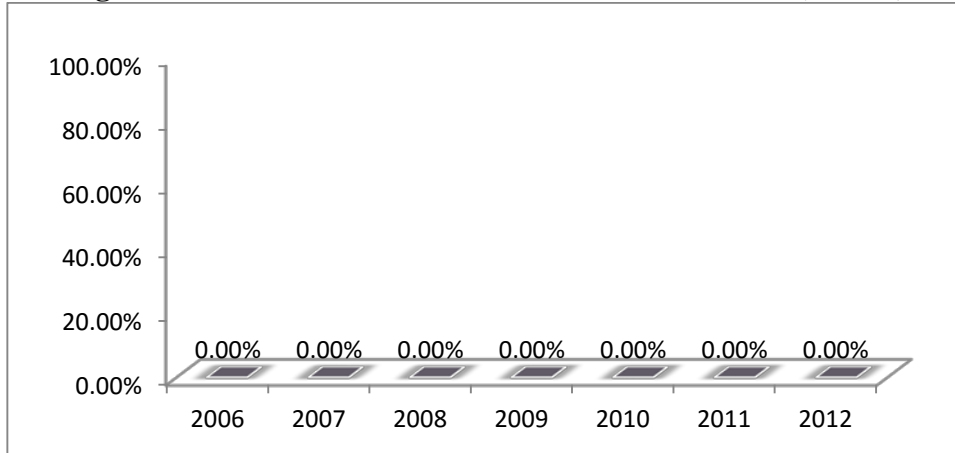
Based on Figure 6.117, HLIB has not managed to strike any financing using *mudarabah* and *musharakah* products as the MM/L ratio computed was nil for the seven-year period.

General Reflections on the Financial Performance of Hong Leong Islamic

Despite the challenging market condition, HLIB remains resilient to sustain growth and profitability. It has showed a significant progress in its profit during the year 2006 to 2012. The bank's liquidity position indicated a declining movement except LDR with the reverse movement. Although the bank faced a downward trend, it has managed to maintain a high liquidity position during the seven-year period. The risk exposure undertaken by HLIB establishes an increasing trend mainly identified from the D/E and EM ratios that summarised the bank's involvement in risky business as it is using its debt to finance its assets. Despite the involvement of risky business, HLIB maintains an upwards movement in D/E, which overall indicates that the bank has an additional fund in converting its assets with share capital. The bank did not concentrate on its long-term development project but focused more on investment in Government bonds as revealed in Figures 6.115 and 7.116 respectively. Similarly, the bank provides other alternatives modes of financing in comparison to *mudarabah* or *musharakah.*

6.2.10 HSBC Amanah Malaysia Berhad (HSBC Amanah)

Profitability ratios

Figure 6.118: HSBC Amanah's Return on Assets (ROA)
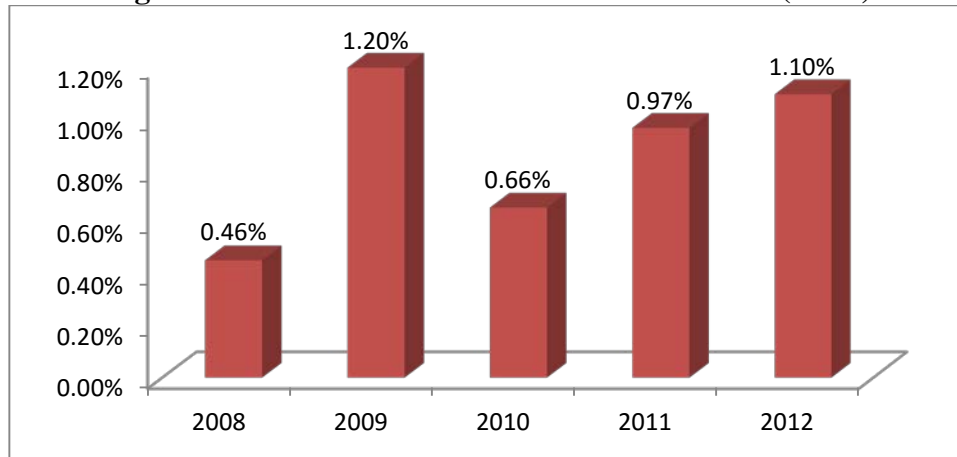
In 2007, HSBC was the first foreign bank that was incorporated locally in Malaysia to be granted by BNM to set up an Islamic banking subsidiary. According to Figure 6.118, the inconsistent profit has resulted in an up-and-down trend towards the ROA for HSBC. The ROA was at 0.46% in 2006 and increased to 1.20% in the following year but reduced to 0.66% in 2010 before risen to 0.97% and 1.10% for 2011 and 2012 respectively.

Figure 6.119: HSBC Amanah's Return on Equity (ROE)
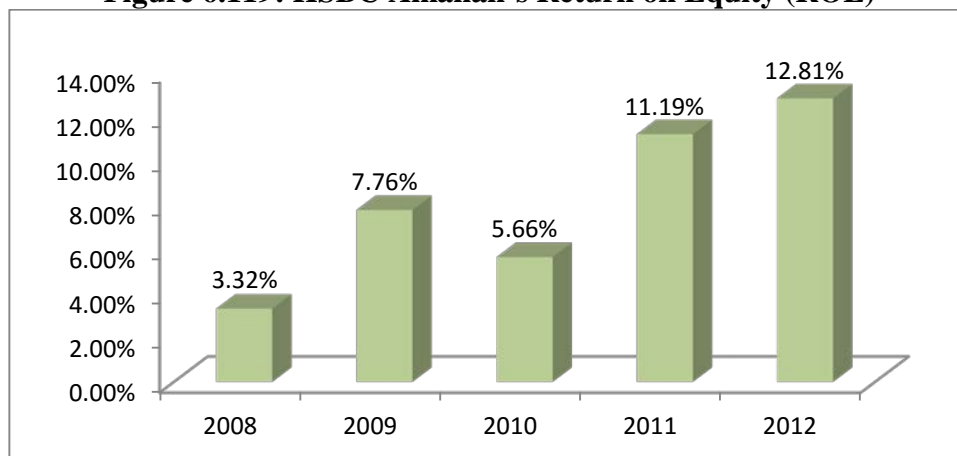
Similar to ROA, the ROE increased from 3.32% in 2008 to 7.76% in the following year with a total growth of 4.44% as portrayed in Figure 6.119. Later it slipped to 5.66% in 2010 with the latest figure computed at 12.81%

Figure 6.120: HSBC Amanah's Profit Expense Ratio (PER)
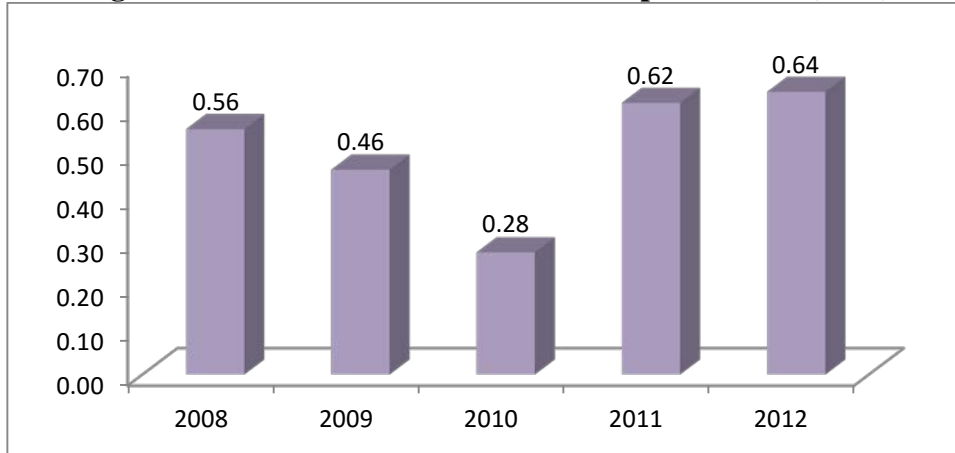
Although the bank is generating profit, the expenses incurred does have an effect towards the financial performance. This scenario can be seen in the PER in Figure 6.120 with a declining trend from 0.56 to 0.46 between the first two-year period and further dropped to 0.28 in 2010. However, the ratio increased to 0.6 marks for 2011 and 2012. Overall, the bank never managed to earn RM1 of profit of every RM1 spent during the five-year period.

Liquidity ratios

Figure 6.121: HSBC Amanah's Cash Deposit Ratio (CDR)
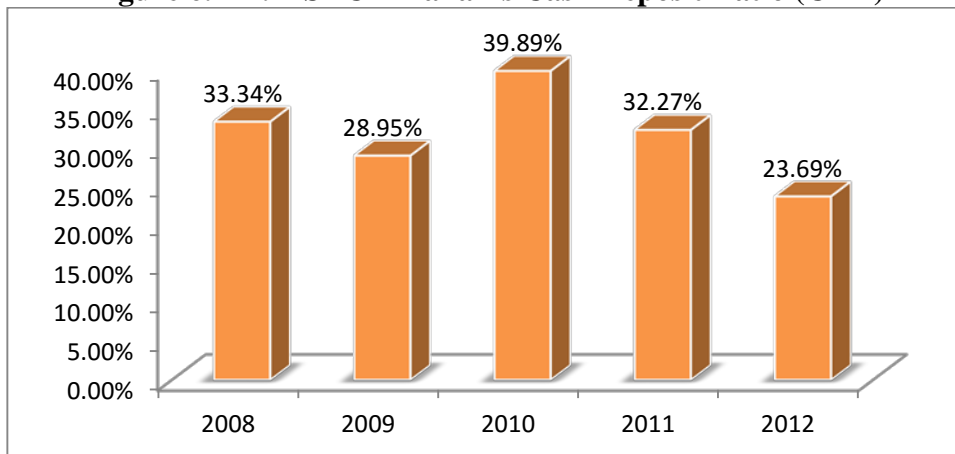
Figure 6.122: HSBC Amanah's Loan Deposit Ratio (LDR)
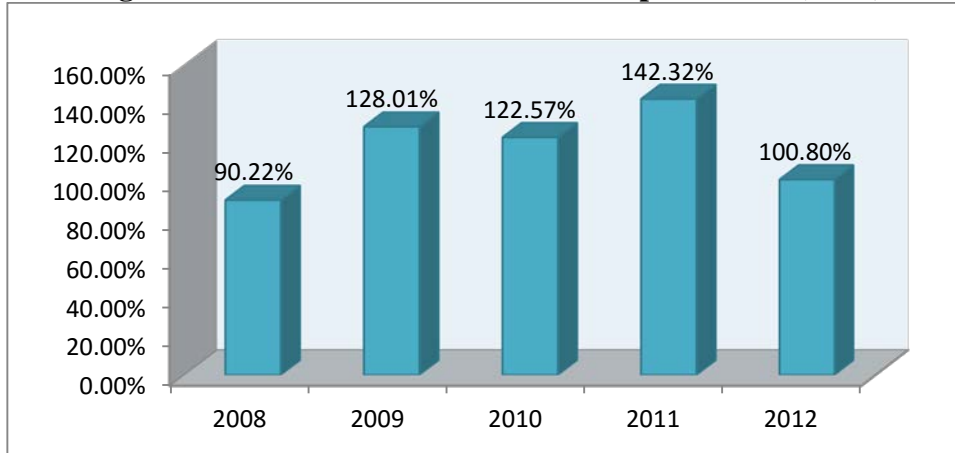
The liquidity ratios for HSBC demonstrate a mixed trend for the years 2008 to 2012. The CDR as in Figure 6.121 indicates an increasing trend from 33.43% to 39.89% in 2008 and 2010 respectively but reduced to 23.69% in 2012. Meanwhile, there was a deterioration of 38% for LDR from 90.22% to 128% for the first two years as per Figure 6.122. However, the ratio reduced to 122.57% in 2010 and peaked at 142.32% in 2011. This position is not considered satisfactory with regards to liquidity.

Figure 6.123: HSBC Amanah's Current Ratio (CR)
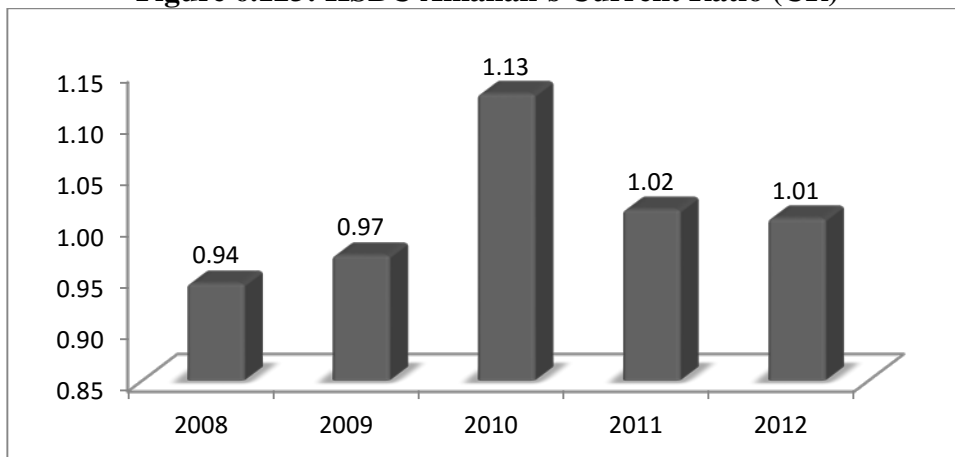
Figure 6.124: HSBC Amanah's Current Asset Ratio (CAR)
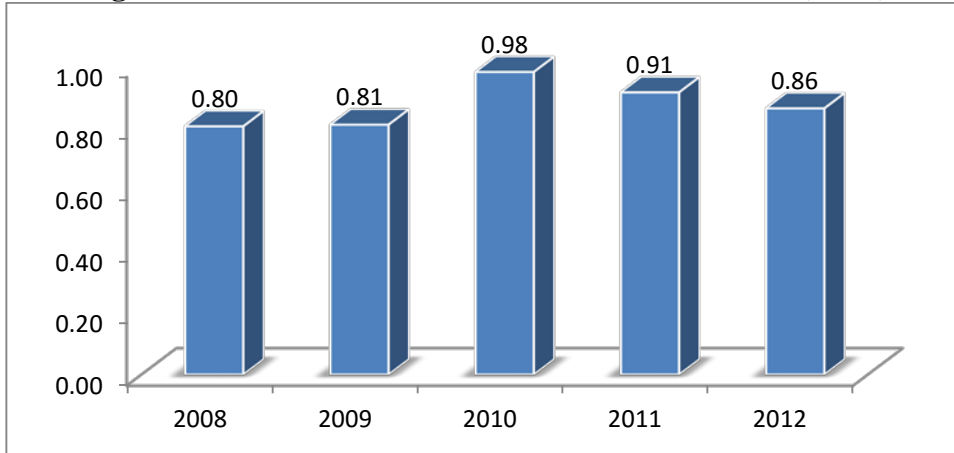
As per Figures 6.123 and 6.124, there were up-and-down trends for CR and CAR whereby 2010 was the highest point for both ratios. Overall, the bank maintains a stable liquidity level during the said period.

Risk and Solvency ratios

Figure 6.125: HSBC Amanah's Debt-to-Equity Ratio (D/E)
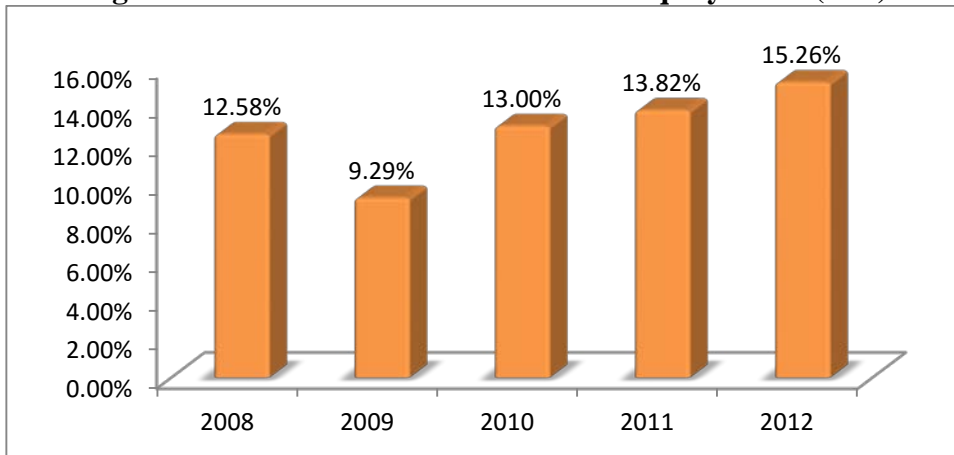
It was observed that risk and solvency demonstrates an increasing trend for the years 2008 to 2012 especially for D/E and EM as per Figures 6.125 and 6.127 respectively. The best performance of the bank with regards to D/E was reported in 2009. The bank's D/E was recorded at 12.58% in 2008, dropped to 9.29% in 2009 then increased to 13.00% in 2010. The ratio continued to get worse each year with D/E of 13.82% and 15.26% respectively.

Figure 6.126: HSBC Amanah's Debt to Total Asset Ratio (DTAR)
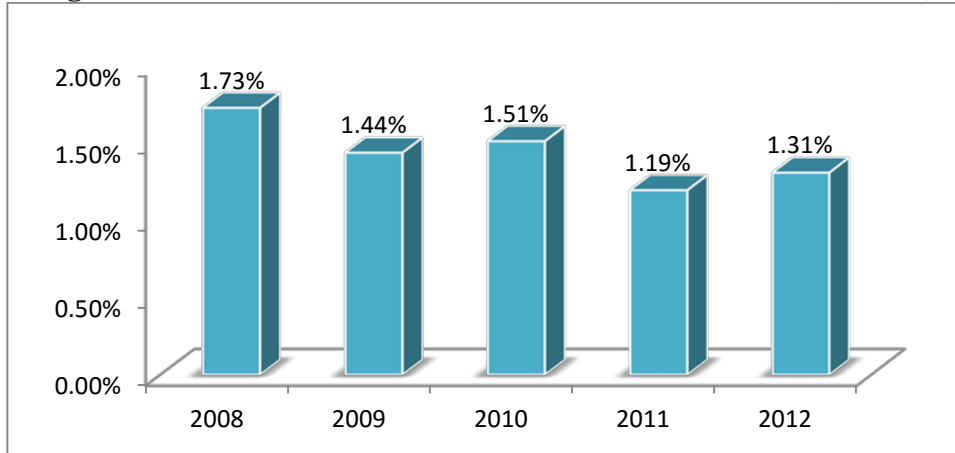
According to Figure 6.126, the bank's DTAR showed a good trend whereby in 2008, the ratio was calculated at 1.73%, reduced to 1.44% in 2009, slightly raised to 1.51% in the following year and declined for the following two years. As of 2012, the ratio was at 1.31%, which translate that 1.31% of the bank's assets acquired via other liabilities.

Figure 6.127: HSBC Amanah's Equity Multiplier (EM)
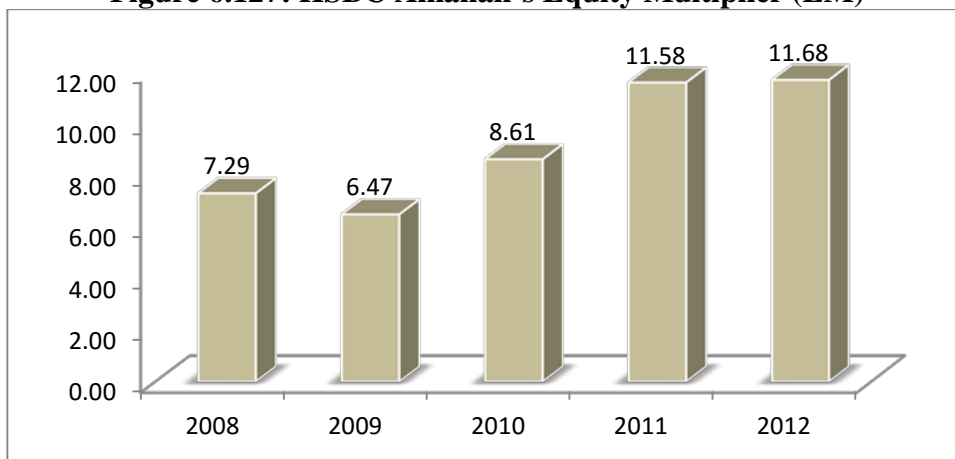
Similar to D/E, the EM was higher in 2008 at 7.29 as compared to 6.47 in 2009 but rose to 8.61 in 2010 and was at the highest at 11.68 in 2012. This trend can be seen in Figure 6.127. Overall, the bank's EM worsened year by year.

Commitment to economy and Muslim Community ratios

Figure 6.128: HSBC Amanah's Long-term Loan Ratio (LTA)
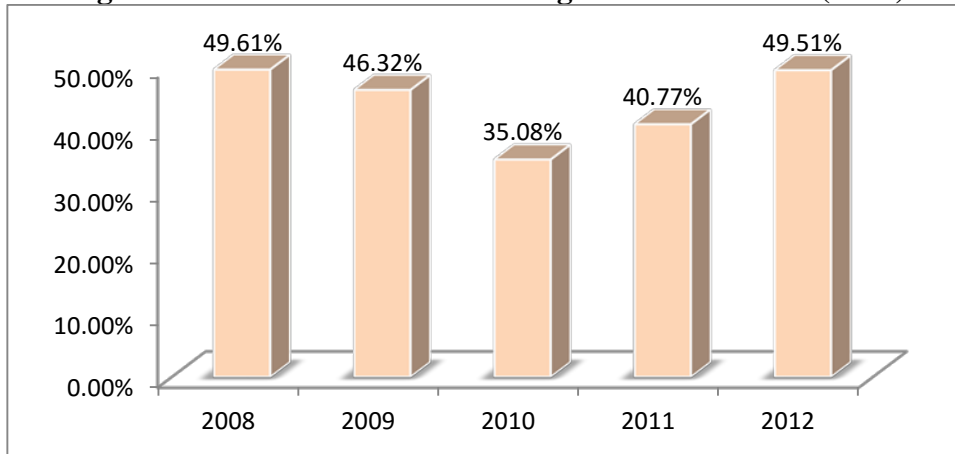
Figure 6.129: HSBC Amanah's Government Bond Investment (GBD)
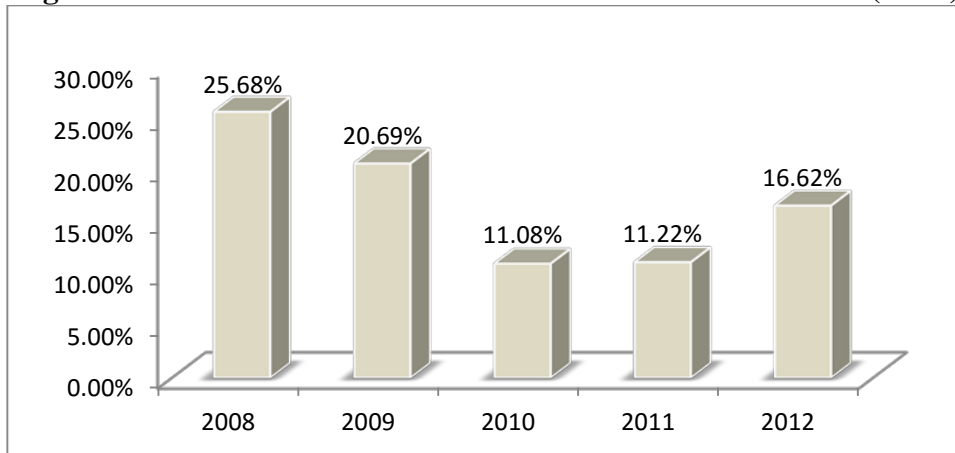
On the first year of the operation, HSBC's LTA was at 49.61% and dropped to 46.32% in 2009 and further dropped to 35.08% in 2010. The ratio increased to 40.77% and 49.51% in 2011 and 2012 respectively. This is illustrated in Figure 6.129.

As per Figure 6.130, the similar trend can be noted for GBD with a drop from 25.68% to 20.69% and further to 11.08% in 2008, 2009 and 2010 respectively. The latest ratio computed at 16.62%. On average, HSBC Amanah invested 17.06% of its depositors' money into government-related investments.

Figure 6.130: HSBC Amanah's *Mudarabah-Musharakah* Ratio (MM/L)
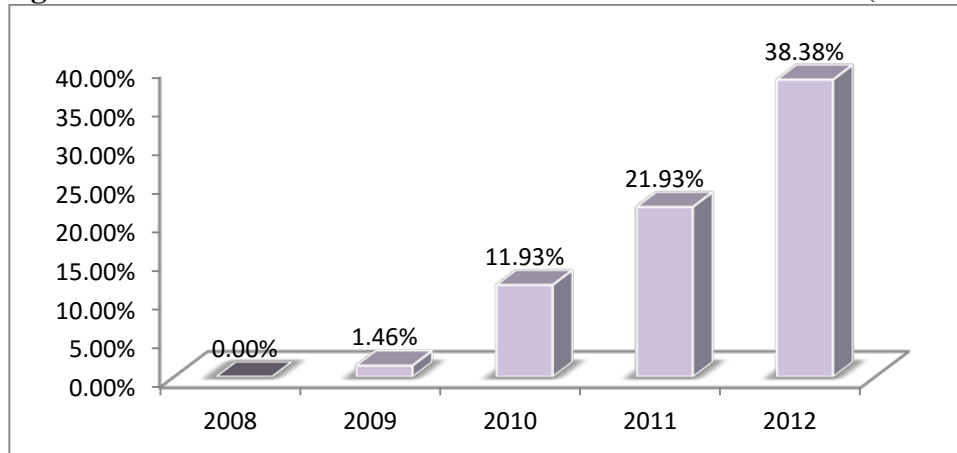
According to Figure 6.130, HSBC's operation did not focus on *mudarabah* and *musharakah* products during its first year of operation. However, there was an improvement towards the products related to *mudarabah* and *musharakah* with an increase of 1.46% in MM/L ratio in 2009. The ratio continues to grow in 2010, 2011 and 2012 with 11.93%, 21.93% and 38.38% respectively. This indicates the bank's commitment in supporting the concept of profit and loss sharing that highly regarded in Islamic finance.

General Reflections on the Financial Performance of HSBC Amanah

HSBC Amanah demonstrated a positive movement for its profitability during the 2008 and 2009 period but turned to the opposite direction in 2010 and moved up again until 2012. The liquidity position of the bank is high with a progressive increasing trend within the first three-year period before plunging in the final two years. The risk and solvency position of the bank is considered stable with consistent D/E, DTAR and EM noted for the five-year period of operations. Meanwhile, a decreasing trend is observed in relation to HSBC's investment in Government bonds. Despite the said trend, HSBC has managed to improve its performance in providing long-term loans and extending *mudarabah* and *musharakah* financing to its customers, which can be applauded.

6.2.11 Kuwait Finance House (Malaysia) Berhad (KFH)

Profitability ratios

Figure 6.131: KFH's Return on Assets (ROA)
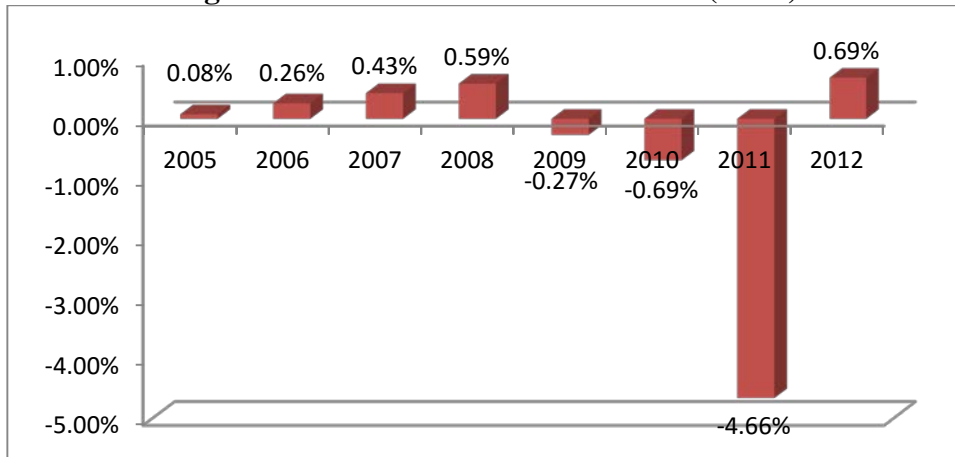
As can be seen in Figure 6.131, the ROA for KFH illustrates a continuous growth from the inception in 2005 until 2008. The ROA started at 0.08% in 2005 and continued a steady growth with 0.26% in 2006, 0.43% in 2007 and 0.59% in 2008. However, due to higher allowances and impairment for losses on financing, KFH incurred losses in 2009 that affected its ROA to decline to -0.27% and further in 2010 to -0.69%. Their worst ROA was recorded in 2011 with -4.66% before they recovered in 2012 with ROA of 0.69%.

Figure 6.132: KFH's Return on Equity (ROE)
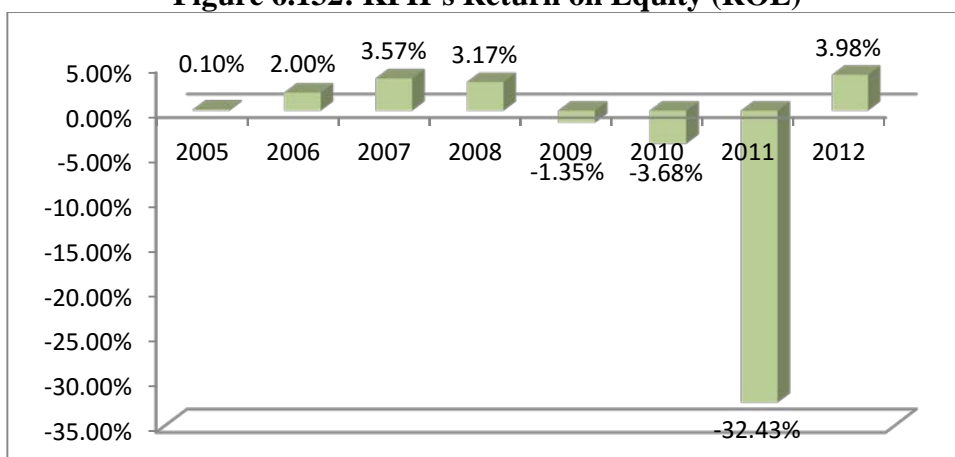
There was a continuous growth for KFH's ROE for the first three years of operation with an average annual growth of 1.89% as shown in Figure 6.132. The year 2008

displays a drop by 0.40% towards KFH's ROE to 3.17%. It further dropped to -1.35% in 2009, -3.68% in 2010 and continued to slip to -32.43% in 2011. The decline in 2008 onwards was due to the bank's action in increasing its paid-up capital and recurring losses.

Figure 6.133: KFH's Profit Expense Ratio (PER)
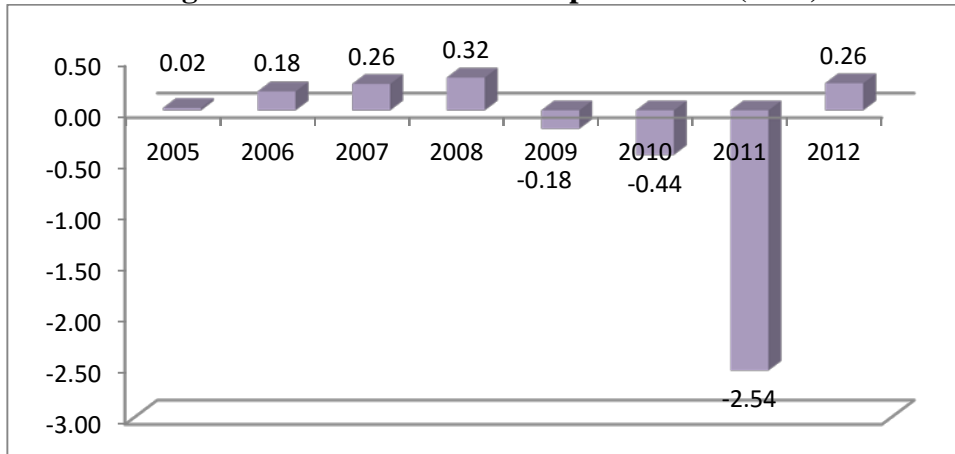
As per Figure 6.133, the bank's PER started low at 0.02 and increased to 0.18, 0.26 and 0.32 in 2006, 2007 and 2008 accordingly. The impact of the losses incurred in 2009, 2010 and 2011 has affected the PER ratio to drop to -0.18 and -0.44 and -2.54 respectively. However, the bank's PER bounced to positive in 2012 to 0.26

Liquidity ratios

Figure 6.134: KFH's Cash Deposit Ratio (CDR)
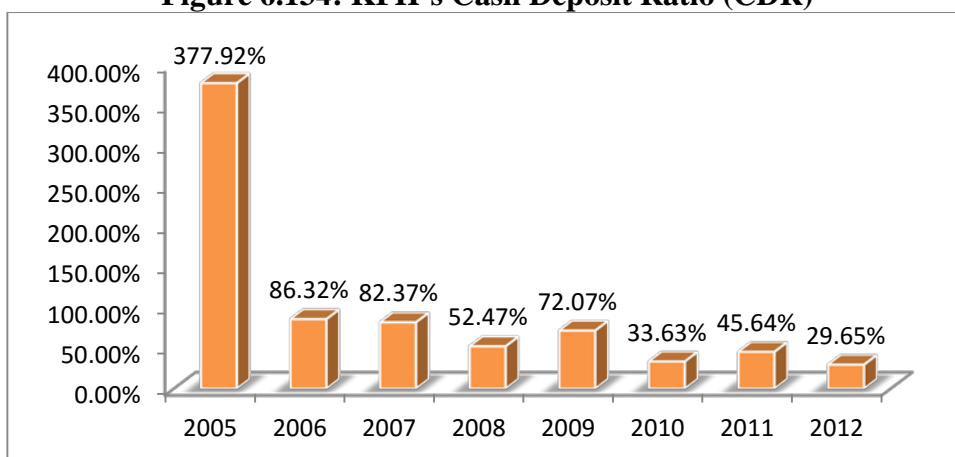
During the eight-year period, the highest CDR was noted in the year 2005 at 377.92% due to high initial cash available during the start of its operation. Subsequently, as per

Figure 6.134, KFH's CDR indicates a downward trend to 86.32%, 82.37% and 52.47% in 2006, 2007 and 2008 respectively. Even though 2009 showed a positive movement of 72.07%, KFH's CDR dropped to the lowest point in 2012 to 29.65%.

Figure 6.135: KFH's Loan Deposit Ratio (LDR)
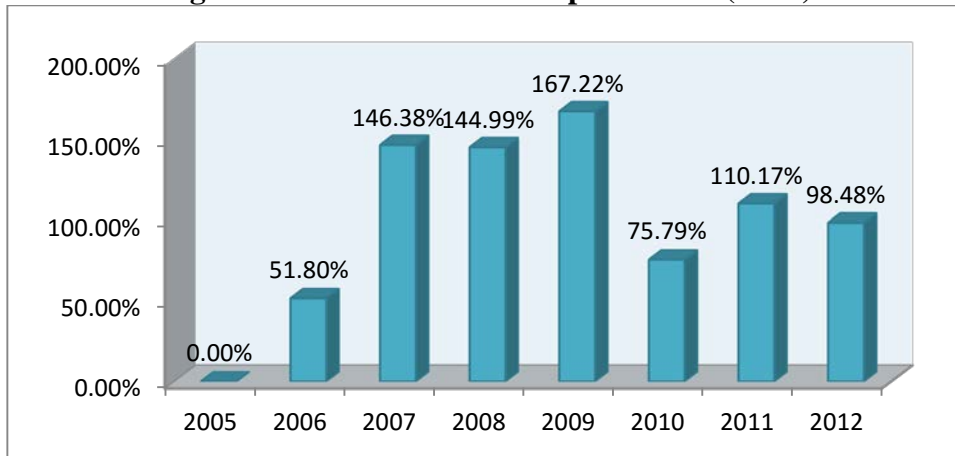
Figure 6.135 illustrates an increasing trend for the LDR from 2005 to 2009 but improved in 2010. The worst LDR recorded in 2009 with 167.22% while the lowest was in 2005 since there was no loan activity that year.

Figure 6.136: KFH's Current Ratio (CR)
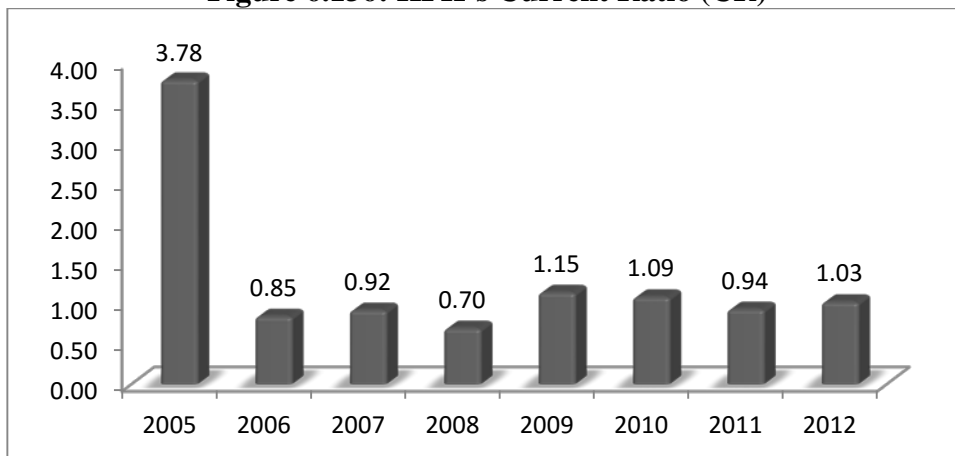
The CR was at the highest of 3.78 in 2005 and faced a sharp decline in 2006 at 0.85. Since then, it was noted that the trend has ups and downs with the latest result was at 1.03. The drop in 2006 is due to the bank's expansion requirement that is related merely to long-term assets. The trend can be observed in Figure 6.136.

Figure 6.137: KFH's Current Asset Ratio (CAR)
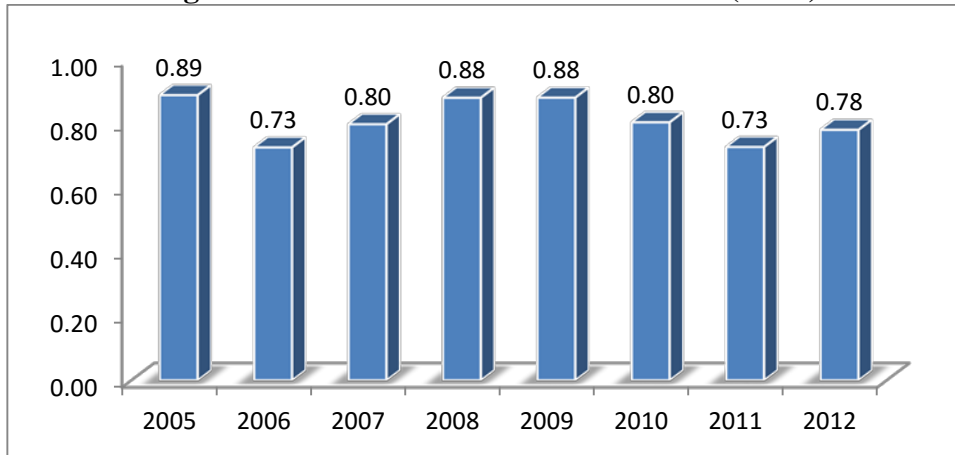
As KFH entered the Malaysian market in 2005, a significant portion of the bank's expenditure was related to long-term assets in the following years. This is shown in Figure 6.137, which indicates a stable growth within the six-year period at the lowest at 0.73 in 2006 and 2011, and the highest at 0.89 in 2005.

Risk and Solvency ratios

Figure 6.138: KFH's Debt-to-Equity Ratio (D/E)
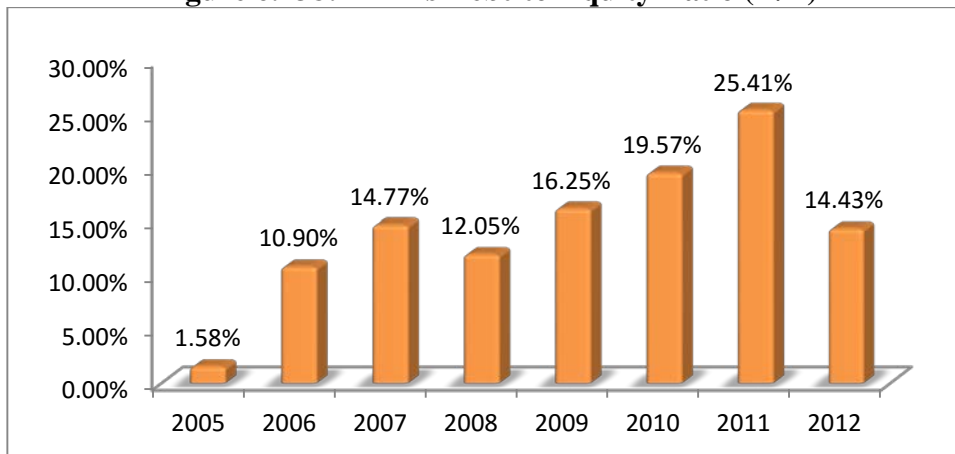
According to Figure 6.138, KFH's initial D/E was at 1.58% during its inception year. The bank's D/E is in an up-and-down trend throughout the years. The highest D/E was in 2011 at 25.41%. The high D/E was due to the bank's expansion programme.

Figure 6.139: KFH's Debt to Total Asset Ratio (DTAR)
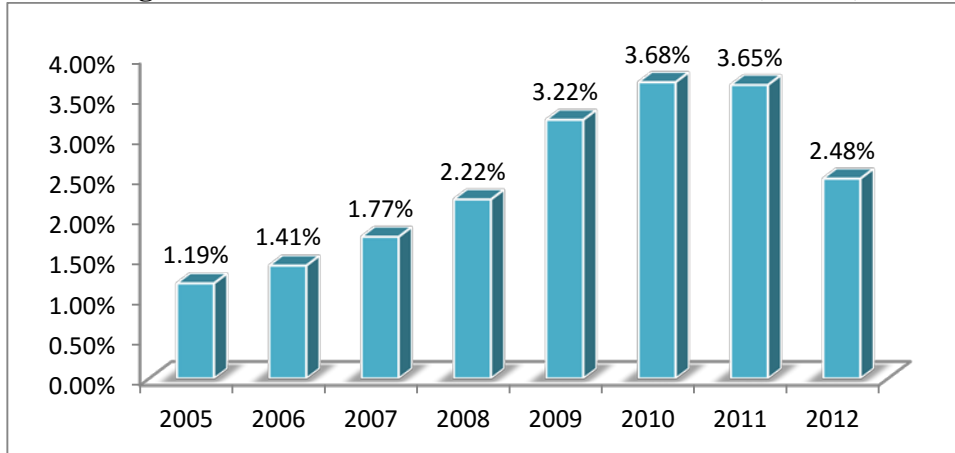
As can be seen in Figure 6.139, the DTAR registered an increasing trend from 2005 to 2010 before going in the opposite direction until 2012. It started with 1.19% in 2005 and reached the highest in 2010 with 3.68%. Overall, KFH demonstrates an average financial strength towards payment to its creditors.

Figure 6.140: KFH's Equity Multiplier (EM)
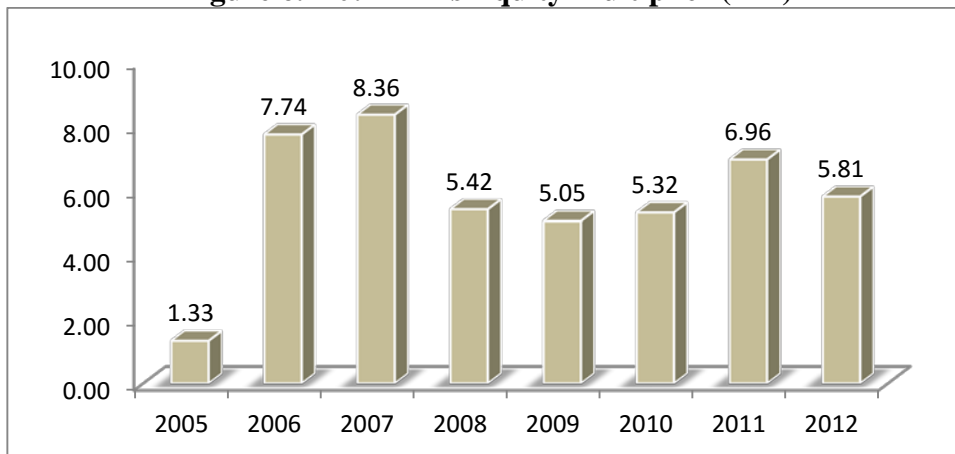
Based on Figure 6.140, the bank's EM was at 1.33 in 2005 and increased to 7.74 and 8.36 in 2006 and 2007 respectively. The years 2008 and 2009 showed a declining trend to 5.42 and 5.05 respectively. The drop of EM showed that KFH has managed to maintain its borrowing, which subsequently reducing its financial risk.

Commitment to economy and Muslim community ratios

Figure 6.141: KFH's Long-term Loan Ratio (LTA)
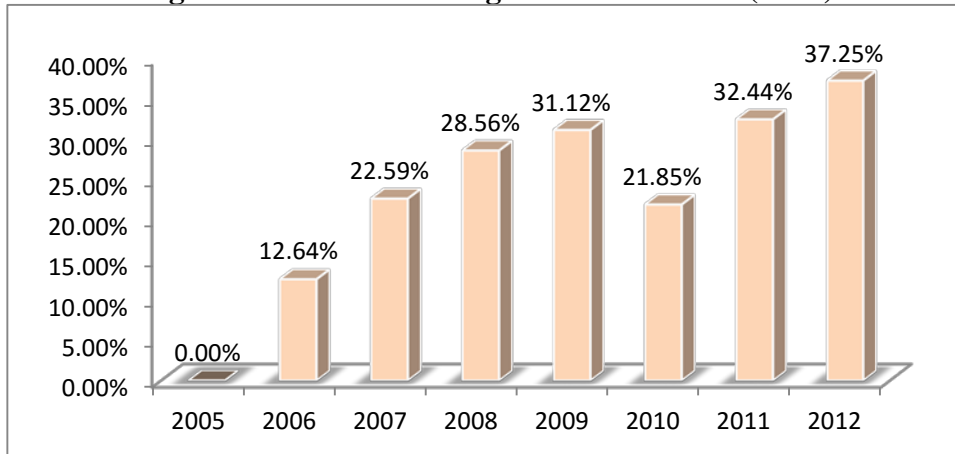
At the beginning of operations in 2005, the LTA for KFH was nil but the following years of operation indicates a continuous growth with the exception of 2010. The upward trend as per Figure 6.141 was in line with KFH's expansion programme in opening new branches throughout the country.

Figure 6.142: KFH's Government Bond Investment (GBD)
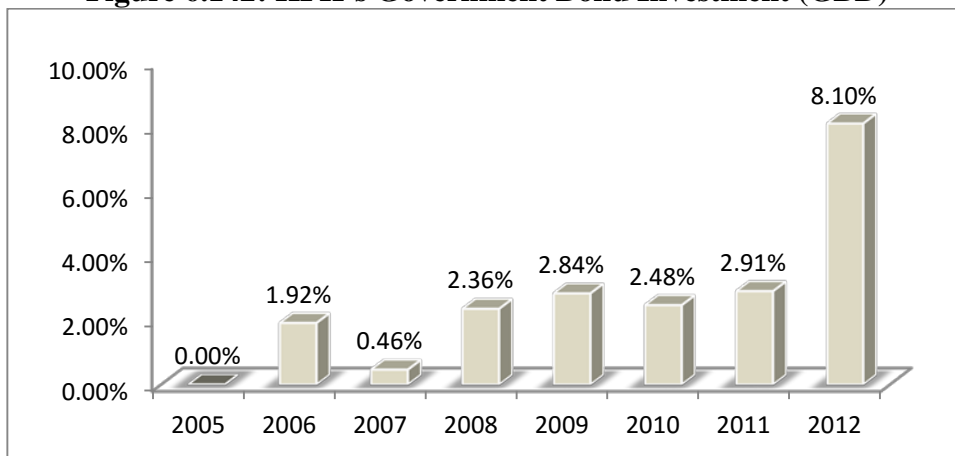
As depicted in Figure 6.142, the overall GBD for KFH was in an increasing trend with 0% in 2005, remain consistent around 2% to 3% throughout 2008 to 2011, and jumped drastically to 8.10% in 2012. This shows that the bank became more committed to invest in investments issued by the government.

Figure 6.143: KFH's *Mudarabah-Musharakah* Ratio (MM/L)
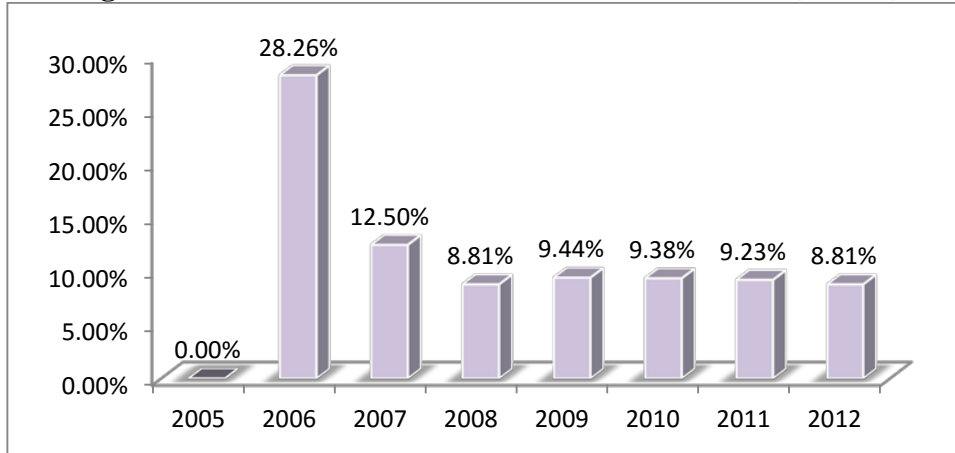
For the first year of operation, KFH's MM/L ratio was nil and subsequently showed an improvement in 2006 with 28.26%. The increasing trend did not sustain and year 2007 shows a dropped to 12.50%. The trend continues in 2008 at 8.81% and remains stable after that with the latest ratio calculated at 8.81%.

General Reflections on the Financial Performance of Kuwait Finance House

During the 2005 to 2012 period, KFH performed satisfactorily in terms of profitability during the initial four years. However, this is not the case during 2009 to 2011 due to the losses they suffered. All the three ratios indicated an upward trend except in 2009, 2010 and 2011 where the bank faced losses that affected its financial performance. There is movement between the periods for KFH's liquidity position, but overall, the bank has maintained a stable position. The ratios computed in relation to KFH's risk and solvency summarised an upward trend for the initial years of operation and faced a declining trend in the following years. With the growing tendency, KFH has specified its long-term development plan on a yearly basis. However, a downward trend is noted from 2007 onwards with respect to the bank's performance in providing *mudarabah* and *musharakah* financing, even though the ratio remained stable after that.

6.2.12 Maybank Islamic Bank Berhad (MIB)

Profitability ratios

Figure 6.144: MIB's Return on Assets (ROA) and Return on Equity (ROE)
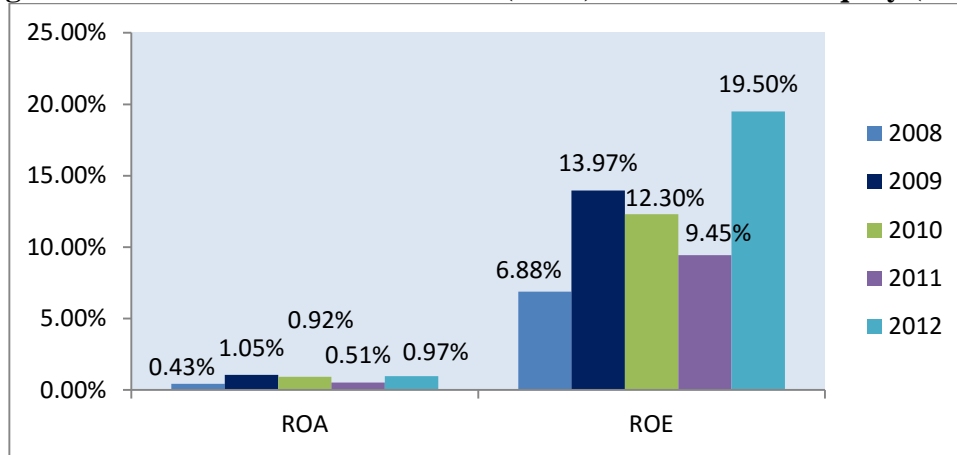
The profitability ratios in Figure 6.144 demonstrate a mixed trend for MIB. The bank's ROA increased from 0.43% in 2008 up to 1.05% in 2009 but dropped to 0.92% in 2010. It further dropped to 0.51% in 2011 before moved up to 0.97% in 2012. On average, MIB generates 0.78% of profits by using its assets.

Meanwhile, a similar trend is noted for ROE with a total growth of 7.09% from 6.88% in 2008 to 13.97% in 2009. The ratio was in decline for two years with 12.30% in 2010 and 9.45% in 2011. The ROE is at the highest point in 2012 with 19.50%.

Figure 6.145: MIB's Profit Expense Ratio (PER)
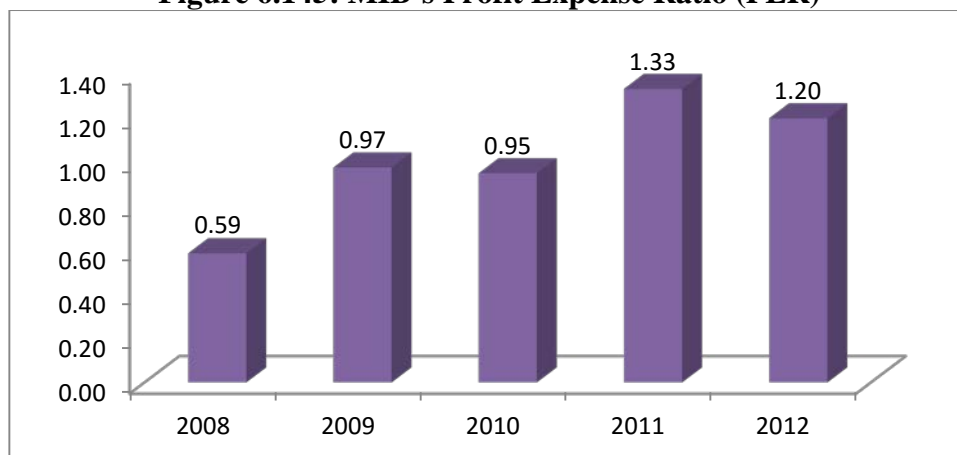
According to Figure 6.146, PER also showed a massive growth from 0.59 to 0.97 from 2008 to 2009 and remained at 0.95 in 2010. The ratio peaked in 2011 with 1.33 but decline to 1.20 in 2012. Overall, MIB has managed to sustain a positive financial performance as per it's PER.

Liquidity ratios

Figure 6.146: MIB's Cash Deposit Ratio (CDR) and Loan Deposit Ratio (LDR)
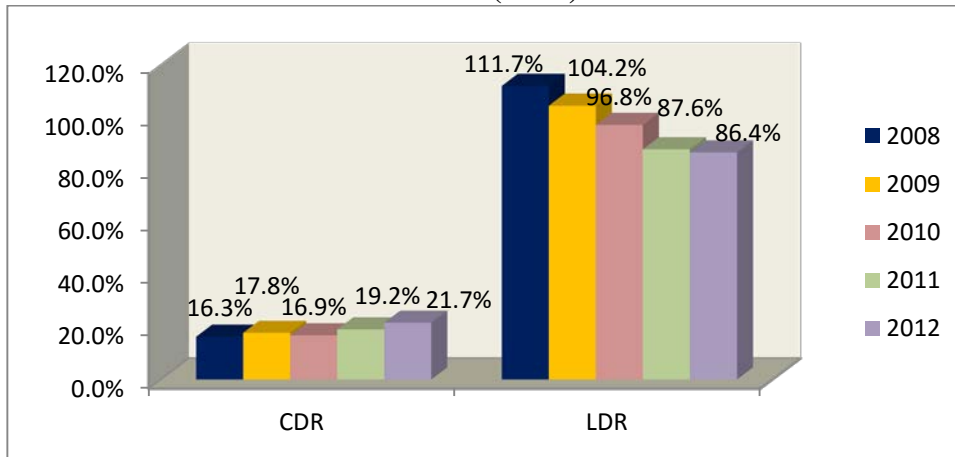
Figure 6.147: MIB's Current Ratio (CR) and Current Asset Ratio (CAR)
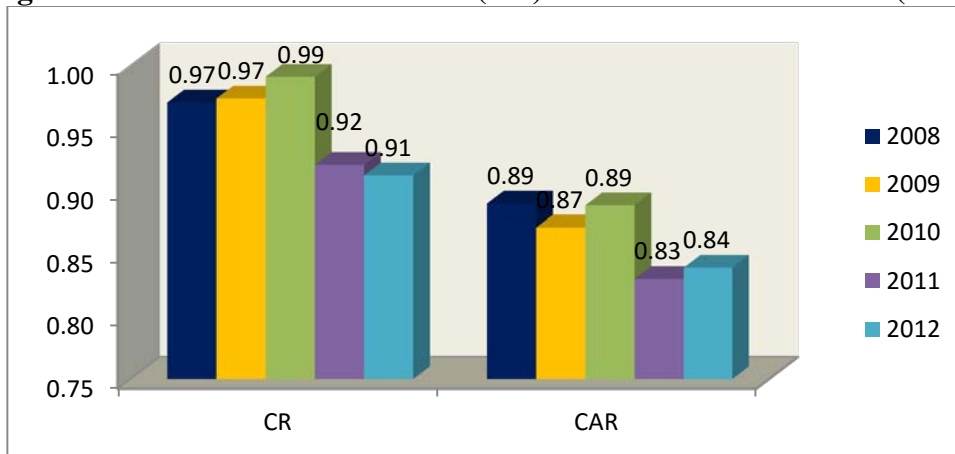
With regards to liquidity ratios, Figure 6.146 shows that the CDR is having a minimal growth while LDR is in an improving trend. The most favourable position of LDR for MIB was in 2012. Meanwhile, in Figure 6.147, CR and CAR indicate a decreasing trend. MIB's CDR increased to 17.8% in 2009 from 16.3% in the previous year due to the bank's aggressive efforts in mobilising deposits. Meanwhile, the remaining ratios as mentioned in Figures 6.146 and 7.147 have a slight drop in the range between 0.02

and 0.08. MIB's level of liquidity suggest that some of the bank's funds are invested in liquid assets which could be readily converted into cash when the need arises.

Risk and Solvency Ratios

Figure 6.148: MIB's Risk and Solvency Ratios
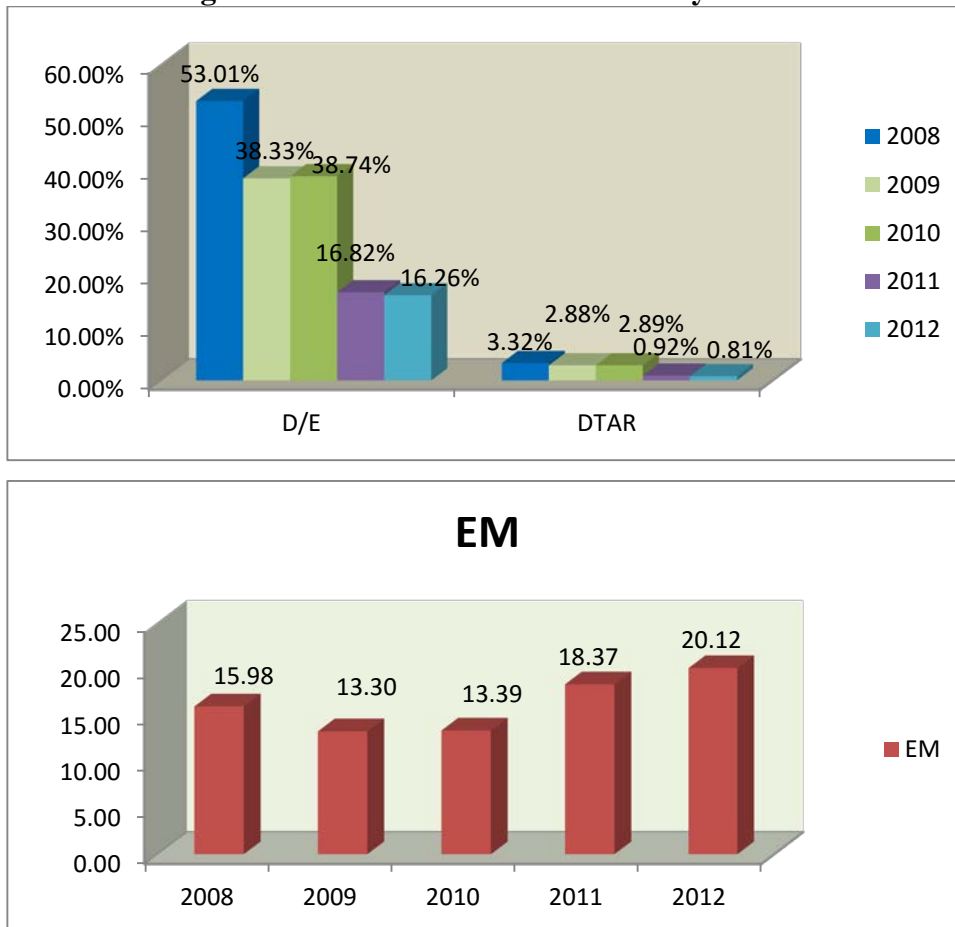
Both D/E and DTAR ratios in Figure 6.148 signify an improving trend within the five-year period. D/E dropped from 53.01% in 2008 to 16.26% in 2012 while DTAR had decreased from 3.32% in 2008 to 0.81% in 2012. The reason for the decline in DTAR was due to the increment of the bank's total assets that are mainly due to expansion in financing and advances, cash and short-term funds, and securities portfolio. Meanwhile, EM is on an increasing trend from 15.98 to 20.12 in 2008 and 2012 respectively. Hence, MIB has managed to control the bank's risk exposure to perform better in the coming years.

Commitment to economy and Muslim community ratios

Figure 6.149: MIB's Commitment to Economy and Muslim Community Ratios
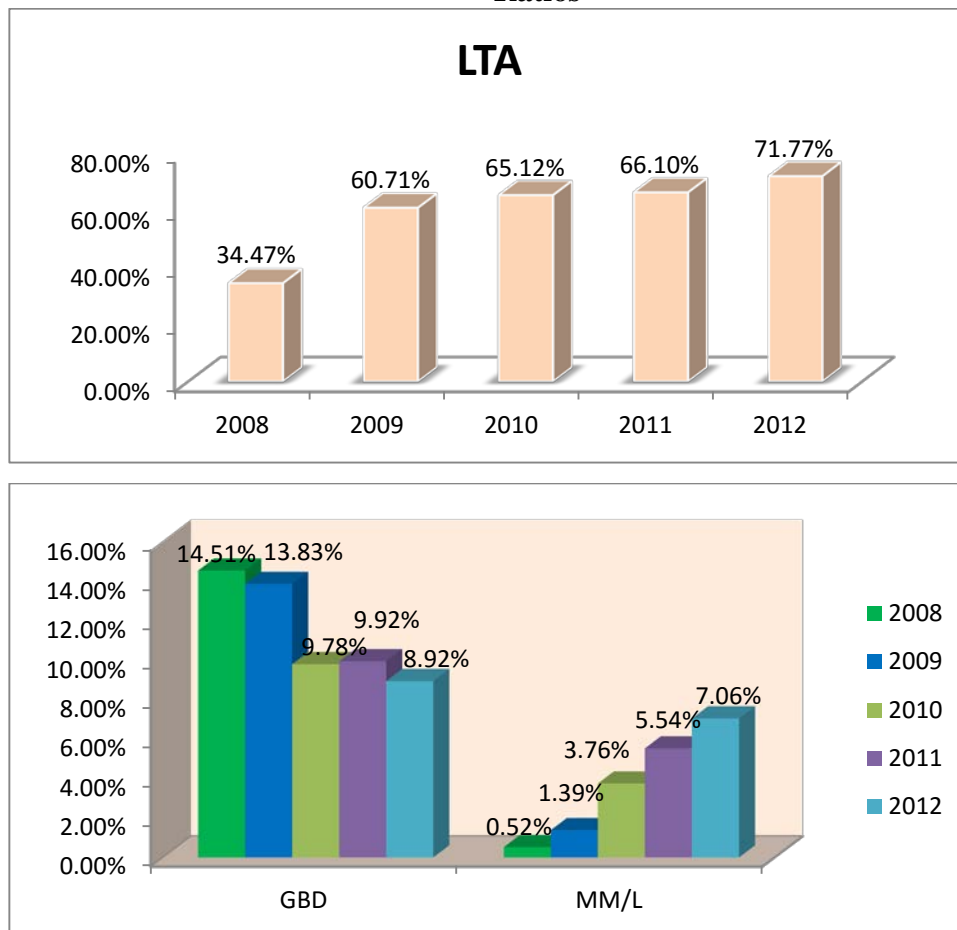
As illustrated in Figure 6.149, MIB is supporting a lot of long-term development projects as noted through the LTA ratio that increased from 34.47% to 60.71% and further to 65.12% in the three-year period. The latest ratio is calculated at 71.77%. Meanwhile, there is a declining trend in GBD, which dropped from 14.51% in 2008 to 13.83 in 2009 and 9.78% in 2010. The ratio further reduced to 8.92% in 2012. It is noted that there is an active growth towards the MM/L ratio. The ratio has a slight increase from 0.52% to 1.39% in 2009, 3.76% in 2010, 5.54% in 2011 and 7.06% in 2012. The improvement shows the efforts made by MIB in providing more financing related products to *mudarabah* and *musharakah* to the Malaysian public.

The three years of operation by MIB denoted an increasing trend towards its profitability performance. Similarly, the liquidity position of the bank is on the high side which indicate the banks availability in turning its assets in terms of cash if needed. However, in terms of building trust among its depositors, the CDR is low but has slightly improved its performance from 2008 to 2010. MIB has marginally reduced its risk and solvency position as indicated by the reduction of D/E and DTAR that enables the bank to maintain its financial performance. As still new in the Islamic banking sector, MIB has clearly identified its long-term development plan for the future. Seemingly, for the investment in the government bond, there was a declining trend from 2008 to 2010. On the other hand, the bank had taken initiatives by providing more *mudarabah* and *musharakah* products in 2009 as compared to 2008 when the bank commenced operation. The ratio has been on the rise since then.

6.2.13 OCBC Al-Amin Bank Berhad (OCBC Al-Amin)

Profitability ratios

Figure 6.150: OCBC Al-Amin's Profitability Ratios

PER
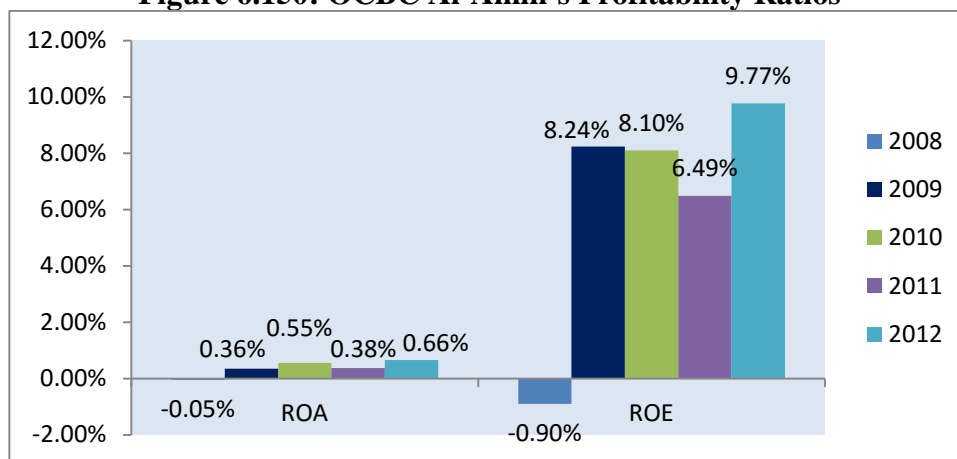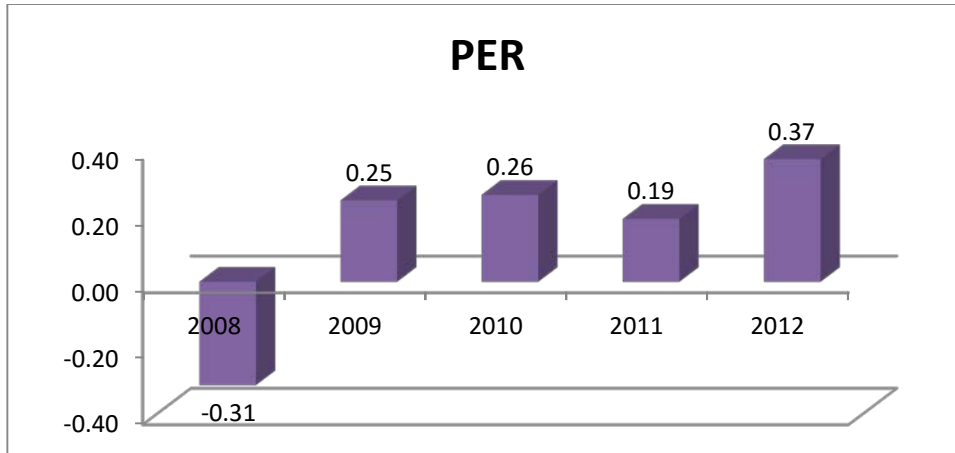
As depicted in 7.150, due to the losses faced in 2008, both OCBC Al-Amin's ROA and ROE were calculated at -0.05% and -0.90% respectively. The financial results for 2008 represented one-month performance as the bank commences its operations effective from 1 December 2008. However, as the bank's operation progressed by generating profit, it has managed to improve its ROA and ROE in the following year at 0.36% and 8.24% respectively. The losses incurred during 2008 have also impacted the PER's performance at -31.29% and subsequently improved up to 24.56% in 2009 and 26.24% in 2010. Overall, all profitability ratios reached the highest point in 2012.

Liquidity ratios

Figure 6.151: OCBC Al-Amin's Liquidity Ratios
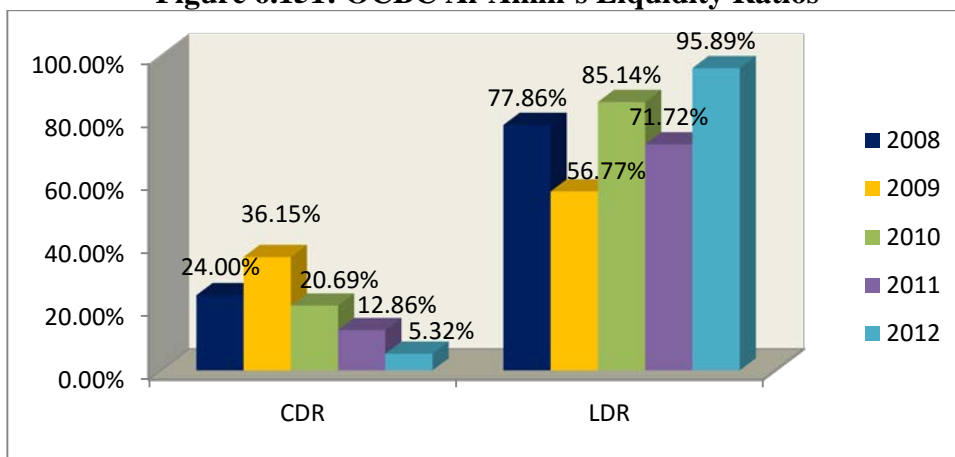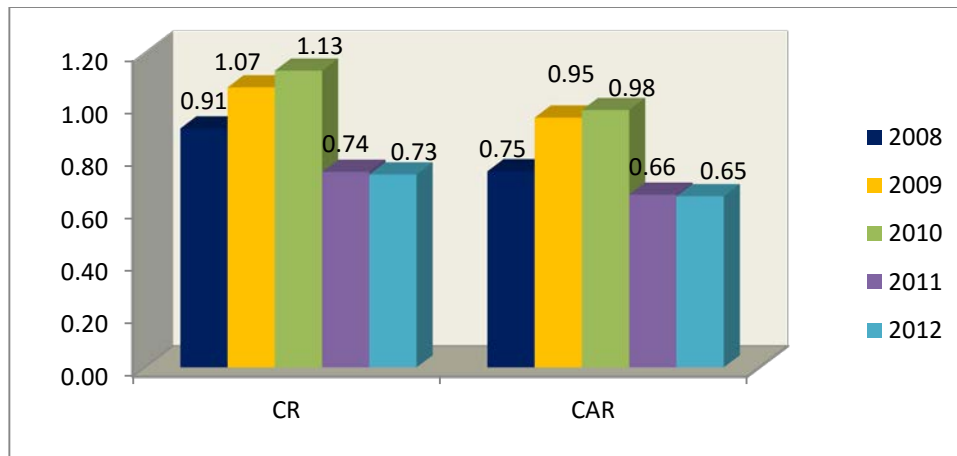
Figure 6.151 shows OCBC Al-Amin's liquidity ratios, with CDR having an upward movement from 24% to 36.15% between the first two-year periods. However, it declined in 2010 to 20.69% and recorded the worst in 2012 with 5.32%. It was also noted that LDR has an increasing trend, even though there was a drop from 77.85% to 56.77% for the year 2008 and 2009. It was the worst in 2012 with 95.89%.

As for CR and CAR, the ratios were in a declining trend. CR showed a temporary upward trend between 2008 and 2010 with ratios of 0.91, 1.07 and 1.13 respectively. During the latest two years observation, its CR was around the 0.7 mark. This suggests that the bank has only RM0.70 of liquid assets for every RM1 of its short-term obligations. Similarly, CAR had an increment of 30% from 0.75 in 2008, 0.95 in 2009 and 0.98 in 2010. The ratio dropped to 0.66 and 0.65 marks during 2011 and 2012 respectively. This trend can be seen in the second part of Figure 6.151.

Risk and solvency ratios

Figure 6.152: OCBC Al-Amin's Risk and Solvency Ratios
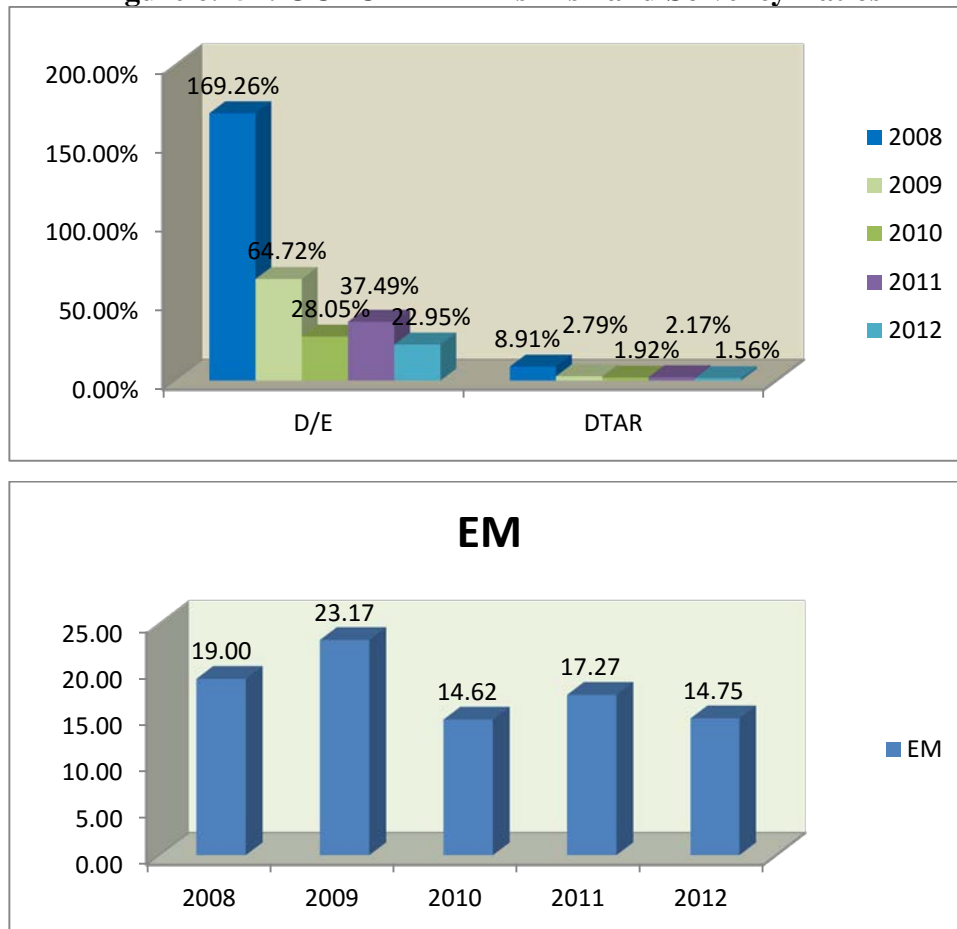
According to Figure 6.152, the D/E and DTAR both demonstrate a declining trend from 169.26% to 22.95% and 8.91% to 1.56% respectively. However, that is not the case for EM, whereby the ratio indicates a somehow stagnant trend from 2008 to 2012, even though there was a slight increase in 2009. The declining trends in OCBC's risk and solvency ratios indicate that the bank has less dependency on debt in their operations. However, there are other banks that have much lower reliance on debt.

Commitment to economy and Muslim community ratios

Figure 6.153: OCBC Al-Amin's Commitment to Economy and Muslim Community Ratios
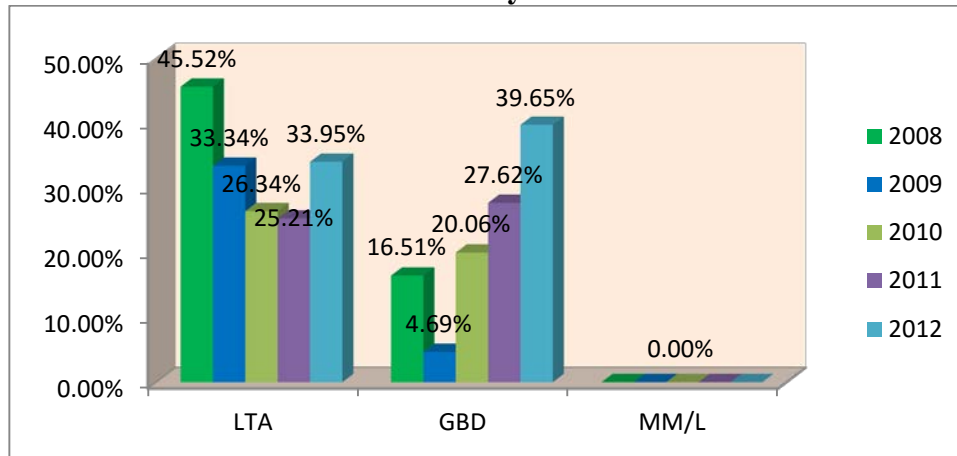
Based on Figure 6.153, the bank has a declining trend toward long-term development projects through the negative growth of LTA registering 45.52% to 26.34% between the first three years before it bounced back to 33.95% in 2012. Meanwhile, the GBD has an increasing pattern, even though the ratio slipped from 16.51% in 2008 to 4.69% in the following year. The ratio soared to 20.06% in 2010 and reached the highest in 2012 at 39.65%. The MM/L is constant at 0% for the five-year period as the banks are providing other types of Islamic financial products compared to *mudarabah* and *musharakah*.

General Reflections on the Financial Performance of OCBC Al-Amin

OCBC Al-Amin had a good start with an increasing trend towards its profitability ratios but between 2009 and 2012, the trend became more settled. The bank maintained a high liquidity position although there was a slight downward movement for some of its ratio computation. As the bank is still at the beginning of its operation in the Islamic banking sector, the risk taken by the bank is minimised, which revealed a declining trend for the initial three-year period. The long-term development plan by OCBC Al-Amin is facing a downward trend, except for GBD, which has an upward trend. However, there was no financing recorded for the *mudarabah* and *musharakah* products throughout the observed period.

6.2.14 Public Islamic Bank Berhad (PIB)

Profitability ratios

Figure 6.154: PIB's Profitability Ratios
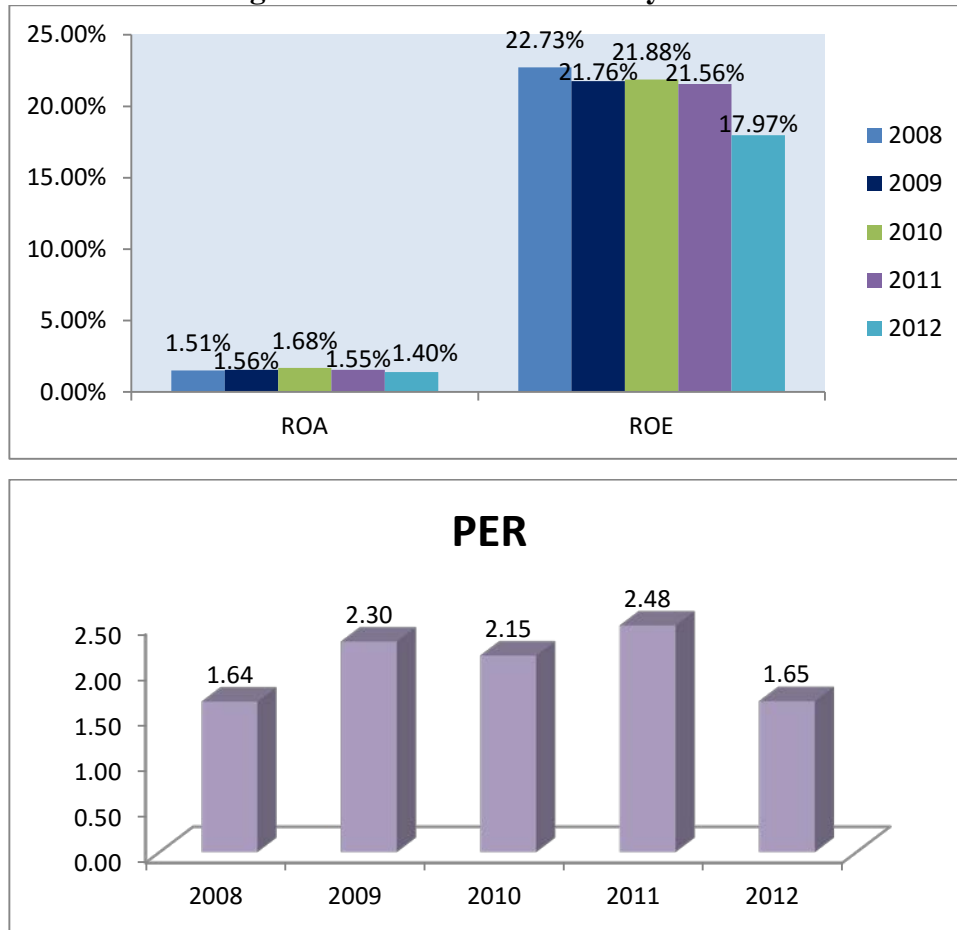
As can be seen in Figure 6.154, PIB's ROA performance is in an increasing trend between the ranges of 1.51% to 1.68% for the first three-year period but dropped to the lowest in 2012 at 1.40%. Meanwhile, there is a slight decrease for the bank's ROE from 22.73% in 2008 to 21.76% in 2009. However, it rebounded to 21.88% in 2010 before dropping to 21.56% and 17.97% in 2011 and 2012 respectively. However, there is a growth towards the PER where in 2008 it was at 1.64 and jumped to 2.30 in the following year before slightly reducing to 2.15 in 2010. The ratio returned to 1.65 in 2012. The high result of PER shows that the bank is cost efficient in dealing with its expenses which is reflected in its generated profit.

Liquidity ratios

Figure 6.155: PIB's Liquidity Ratios
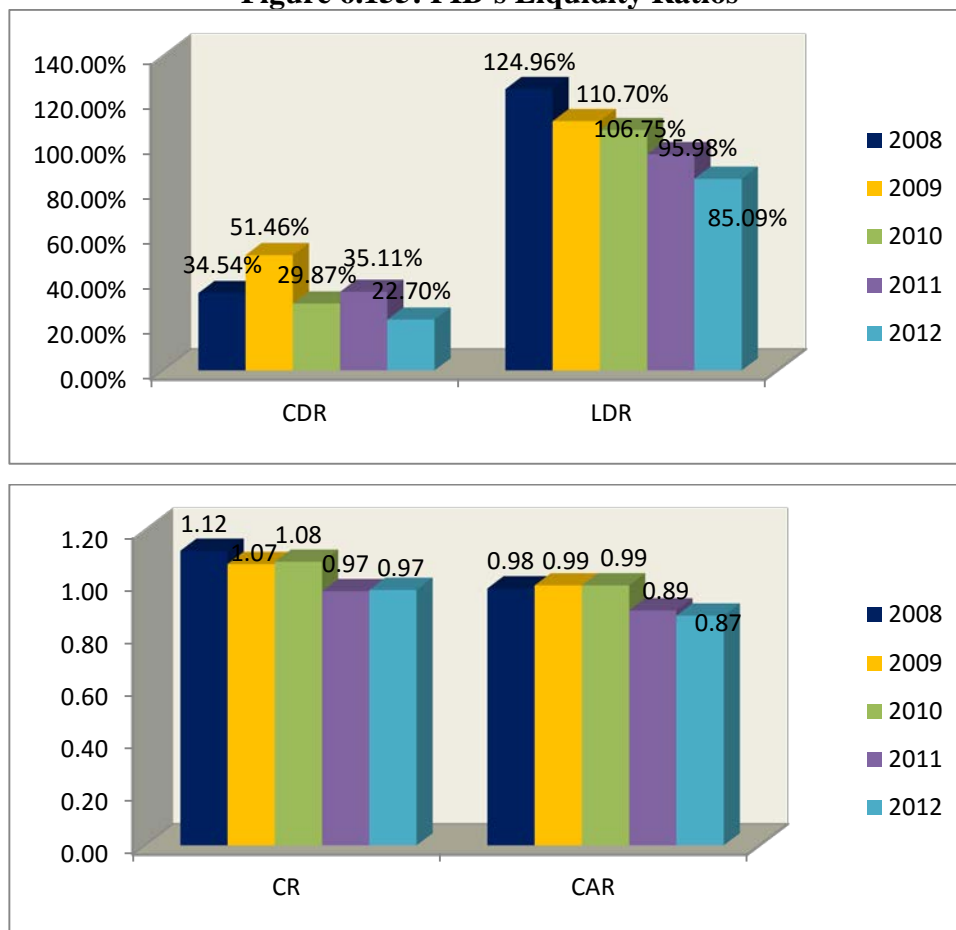
As depicted by Figure 6.155, the CR showed consistent progress from 1.12 in 2008 to 1.08 in 2010 but reduced to 0.97 in 2011 and 2012. With the said trend, the bank can meet its financial obligations. Meanwhile, the bank's CDR was at 34.54% in 2008, increased to 51.46% in 2009 and subsequently decreased to 29.87% in 2009 before reaching the lowest in 2012 at 22.70%. As for LDR, the ratio is in an improving trend with a drop from 124.96% in 2008 to 110.70% in 2009 and further to 85.09% in 2012. Meanwhile, CAR reveals stagnant growth in the range of 0.98 and 0.99 for the first three years of their operation before dropping to 0.89 and 0.87 for 2011 and 2012.

Risk and solvency ratios

Figure 6.156: PIB's Risk and Solvency Ratios
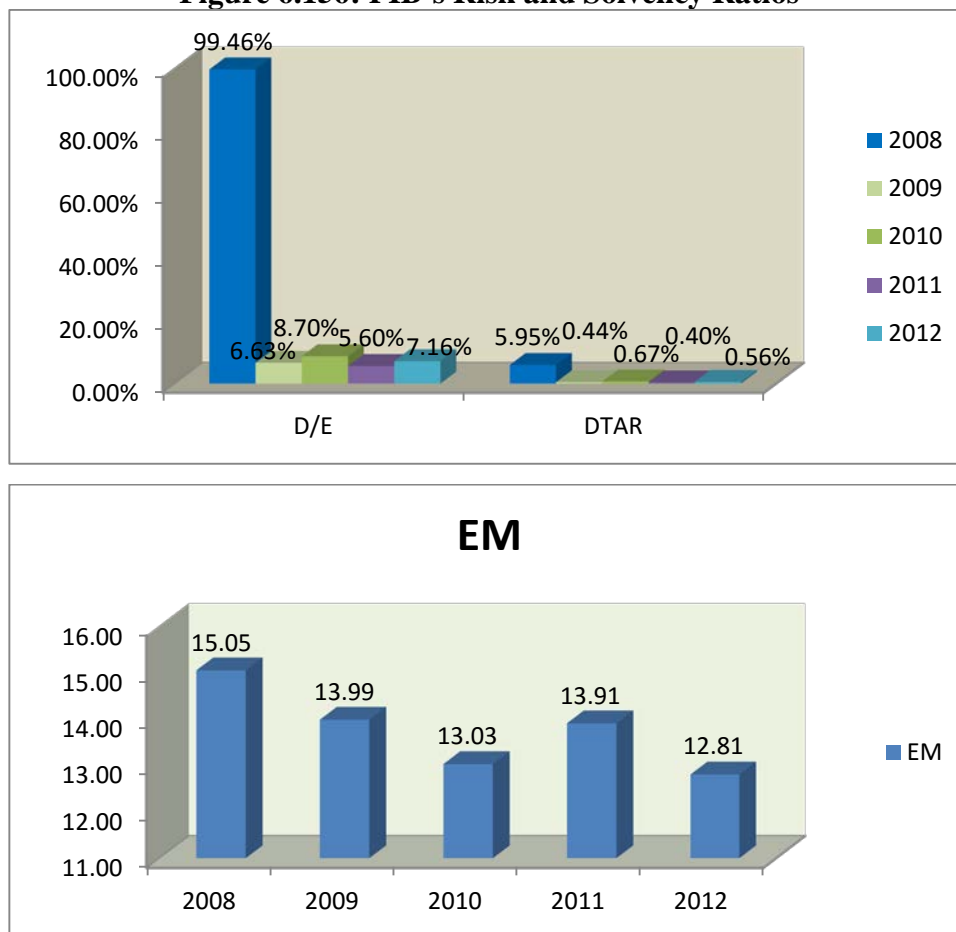
Figure 6.156 indicates PIB's risk and solvency ratios are in a declining trend within the five-year period. D/E shows a sharp downward trend from 99.46% in 2008 to 7.16% in 2012. As for DTAR, the ratio dropped from 5.99% to 0.44% between 2008 and 2009 and reached the lowest in 2011 at 0.40%. Meanwhile, EM reduced by 1.06 between the two years from 15.05 to 13.99 and further reduced to 13.03 in 2010. The ratio is at the lowest in 2012 at 12.81. The decreasing trend concludes that the bank is reducing its reliance on debt in its operation.

Commitment to economy and Muslim community ratios

Figure 6.157: PIB's Commitment to Economy and Muslim Community Ratios
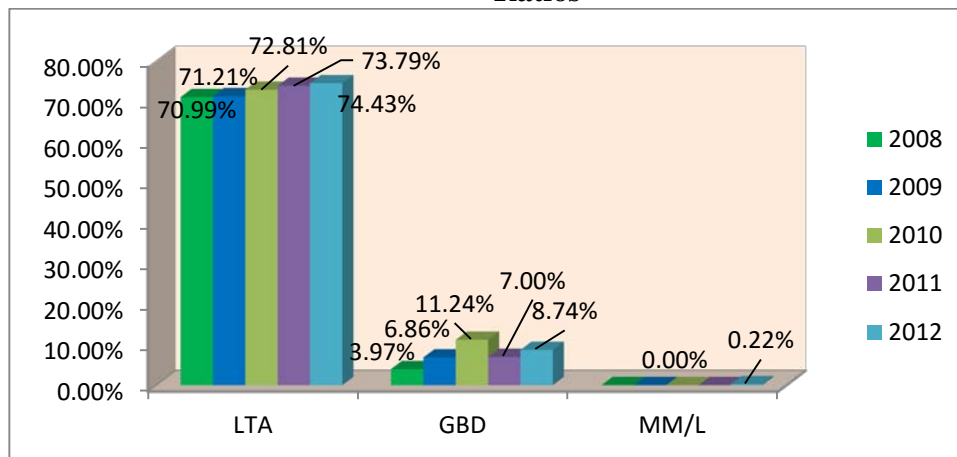
As per Figure 6.157, an upwards movement trend can be seen in LTA from 70.99% in 2008 to 71.21% in 2009, 72.81% in 2010, 73.79% in 2011 and 74.43% in 2012. This shows the bank's support towards banking sector particularly for Islamic banking. During the bank's initial operation in 2008, the GBD was at 3.97%, and increased to 6.86% in the following year and further improved to 11.24% in 2010. The bank's latest GBD is at 8.74%. As the bank is one of the newest in the Islamic banking sector, the MM/L ratio is constant at 0.00 for the first four years of their operation but involved in *musharakah* in 2012.

General Reflections on the Financial Performance of Public Islamic

During 2008 to 2012, there was an upwards movement trend towards profitability. There was a movement noted for PIB's liquidity position, but the bank managed to secure a decent liquidity position. The risk taken by the bank has reduced compared to its first year of operation in 2008. PIB seemed to contribute to the economy and Muslim society towards long-term project development and investment in Government bonds that revealed a moving forward pattern. There was also some sign of involvement in *musharakah* transactions starting from 2012.

6.2.15 RHB Islamic Bank Berhad (RHB Islamic)

Profitability Ratios

Figure 6.158: RHB Islamic's Return on Assets (ROA)
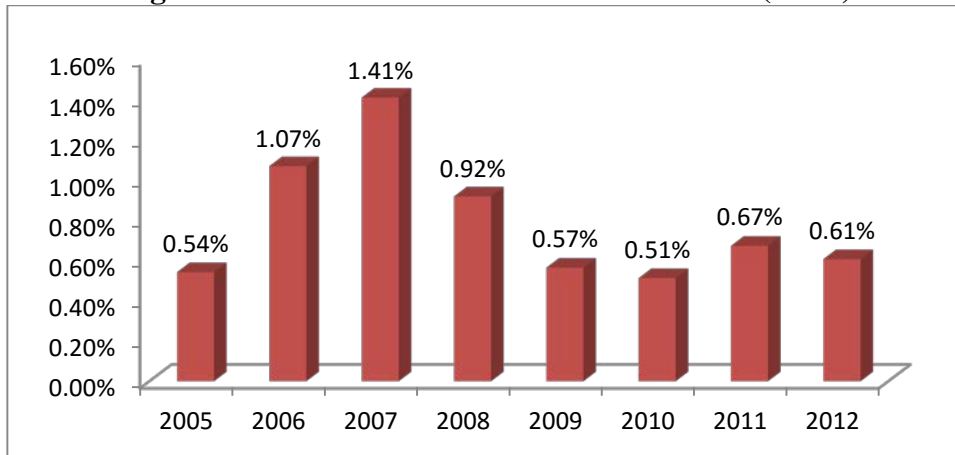
According to Figure 6.158, there is significant progress towards RHB Islamic's profitability for the first three years before it changed to a declining trend. Since inception, RHB Islamic's ROA indicates a definite trend. However, from 2008 onwards there was a decline in the ROA as shown in Figure 6.158. In 2005, the ROA stood at 0.54% and for the subsequent years, it continued to grow at 1.07% and 1.41% in 2006 and 2007 respectively. The year 2008 marked the beginning of the declining trend at 0.92% and dropped to 0.57% in 2009 and further declined to 0.51% in 2010. The latest ratio in 2012 is calculated at 0.61%.

Figure 6.159: RHB Islamic's Return on Equity (ROE)
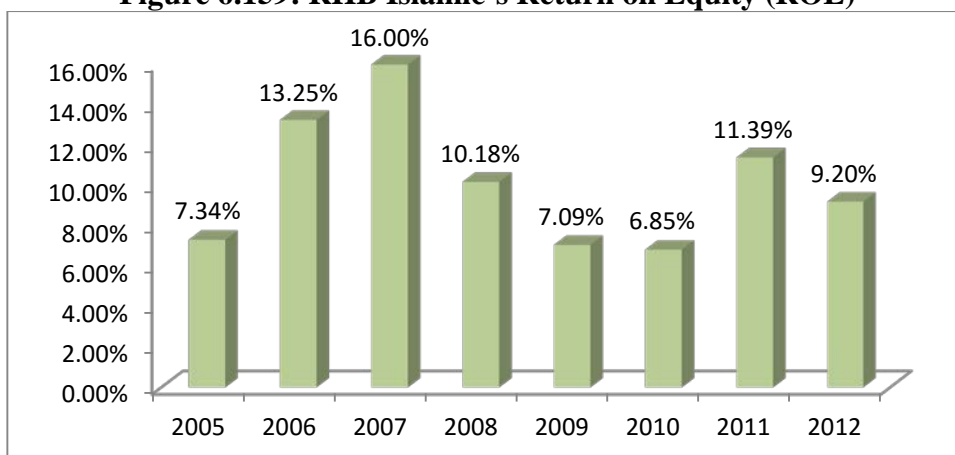
The bank's ROE had a similar trend of which it started at 7.34% in 2005 and has increased throughout the years to 13.25% and 16.00% for the year 2006 and 2007 respectively. However, the performance has dropped to 10.08% in 2008 and further recorded a decline to 6.85% in 2010. As of 2012, the ratio was at 9.20% as can be seen in Figure 6.159.

Figure 6.160: RHB Islamic's Profit Expense Ratio (PER)
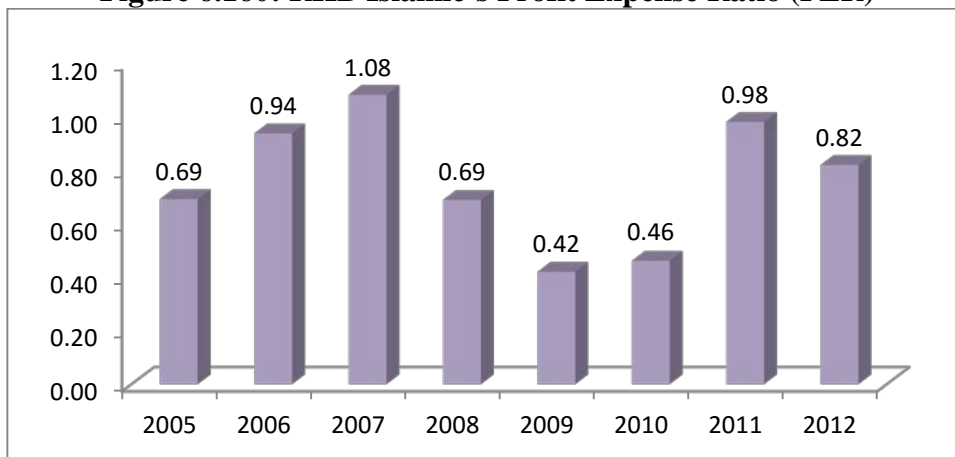
Meanwhile, for the first three years, the PER displays an upward trend from 0.69 to 1.08, which indicates the banks efficiency in generating profit from the expenses incurred. Despite the said trend, the PER declined drastically from 1.08 to 0.69 in 2008 and further dropped to 0.42 in the following year. There was a sign of revival in 2010 but it still far from their best, which was recorded in 2007. The trend can be observed in Figure 6.160.

Liquidity Ratios

Figure 6.161: RHB Islamic's Cash Deposit Ratio (CDR)
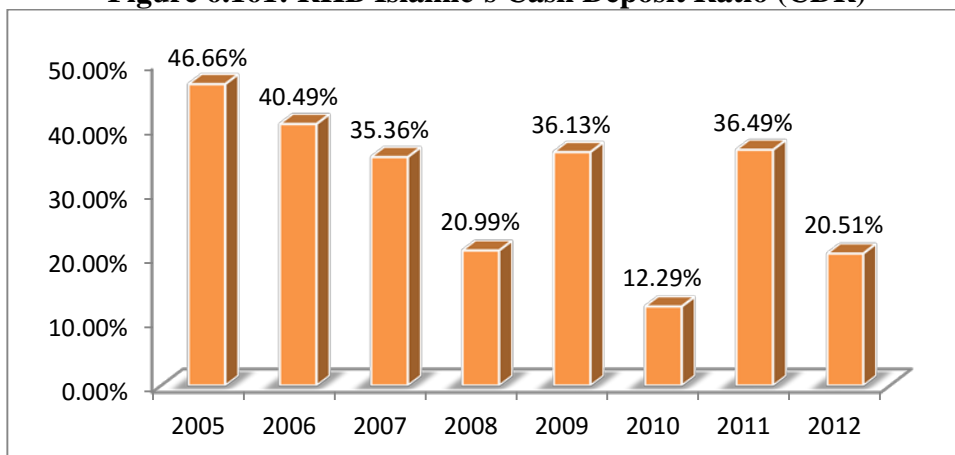
As per Figure 6.161, in 2005 the CDR was at 46.66%, which was at the highest during the eight-year observation. However, the performance dropped to 40.49% in 2006 and then recorded a further decline to 35.36% and 20.99% in 2007 and 2008 respectively. The CDR managed to perform better in 2009 at 36.13% with a growth of 16% from the previous year. Although the global economic downturn has affected the bank's financial performance, the bank has managed to build its depositors trust as noted by the positive growth from 2008 to 2009. However, the bank slumped to 12.29% in 2010 which was their worst CDR ever recorded before recovering in the following two years.

Figure 6.162: RHB Islamic's Loan Deposit Ratio (LDR)
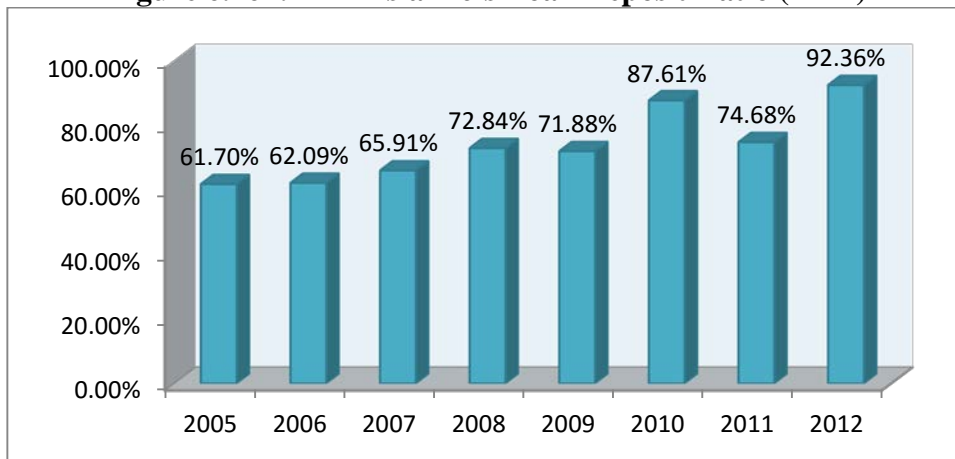
Based on Figure 6.162, the LDR from the 2005 to 2012 indicates an upward trend with a slight increase yearly except in 2010 where a difference of 16%. The bank's LDR was at its worst in 2012 with 92.36%. The increasing trend indicates that the value of financing provided by the bank moved closer to the value of deposits received from customers by each year.

Figure 6.163: RHB Islamic's Current Ratio (CR)
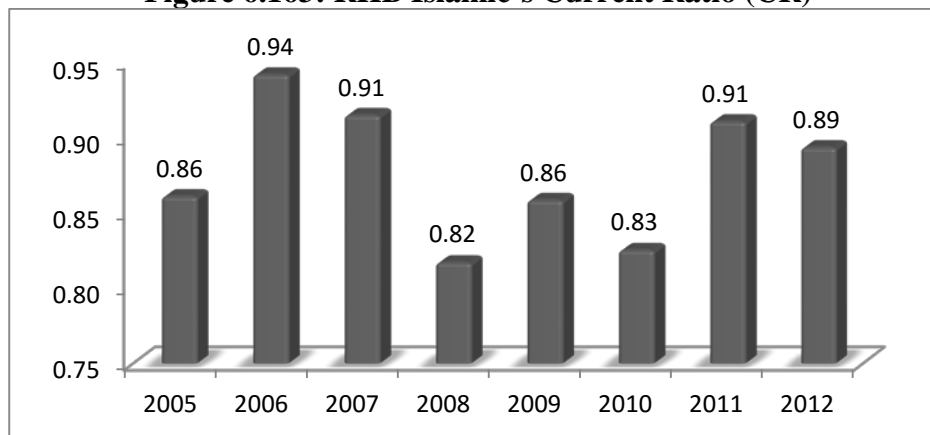
In 2005, the bank's CR was 0.86 and further increased to 0.94 in 2006 and dropped slightly to 0.91 in 2007. The CR was at the lowest in 2008 at 0.82 and managed to improve its performance in 2009 to 0.86 and 0.89 in 2012. Overall, the bank has a stable liquidity level from 2005 to 2012.

Figure 6.164: RHB Islamic's Current Asset Ratio (CAR)
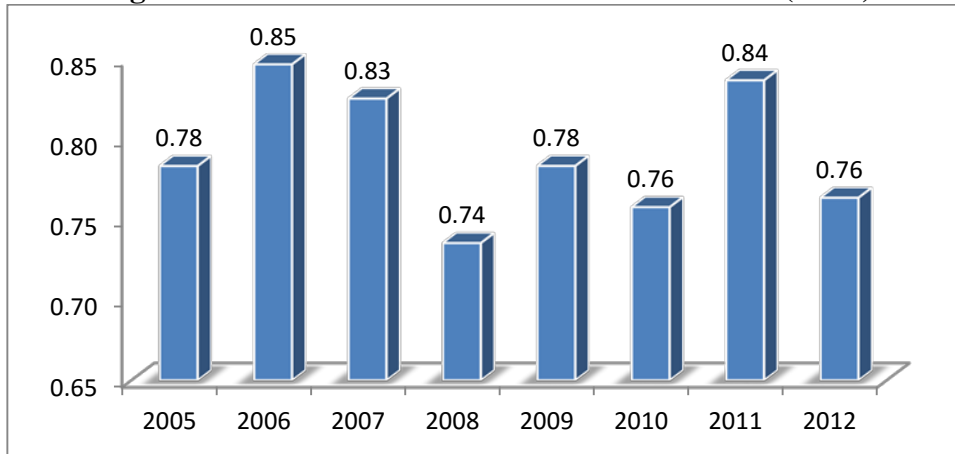
Within the eight-year period as shown in Figure 6.164, the CAR was at the highest in 2006 at 0.85 and the lowest at 0.74 in 2008. The first two years illustrate an upward trend from 0.78 to 0.85. The performance subsequently dropped to 0.83 and 0.74 in the following years but managed to perform better in 2009 at 0.78 but slightly reduced to 0.76 in 2010 before it shot up to 0.84 n 2011. Therefore, in terms of the banks liquidity level, it seems that the bank has more liquid assets that could be used to meet its obligations.

Risk and Solvency Ratios

Figure 6.165: RHB Islamic's Debt-to-Equity Ratio (D/E)
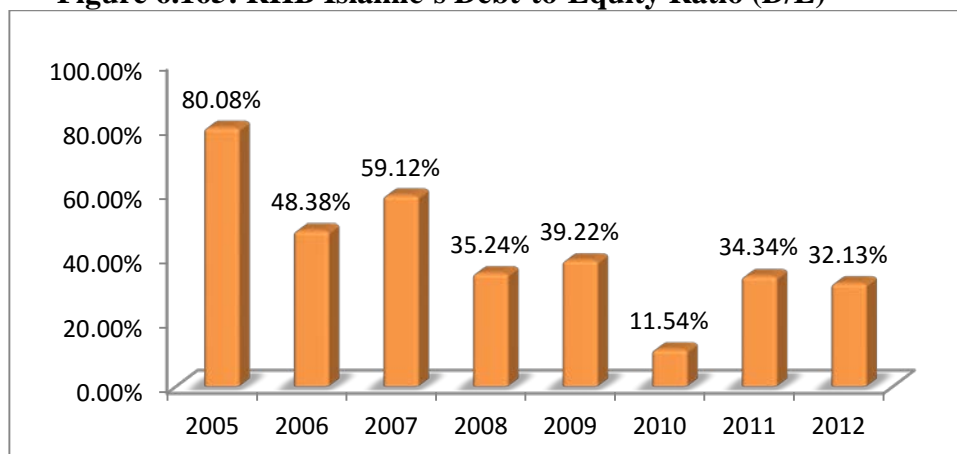
According to Figure 6.165, the D/E was at the worst point in 2005 with 80.08% and dropped to 48.38% in 2006 and performed the best in 2010 at 11.54%. In the following two years, the performance increased to 34.34% and 32.13%. RHB Islamic is expected to face further financial risk if the D/E continues to grow annually. Overall, the bank has a downward trend with regards to D/E but needs to cut its dependency on debt in order to avoid the ratio to expand in the future.

Figure 6.166: RHB Islamic's Debt to Total Asset Ratio (DTAR)
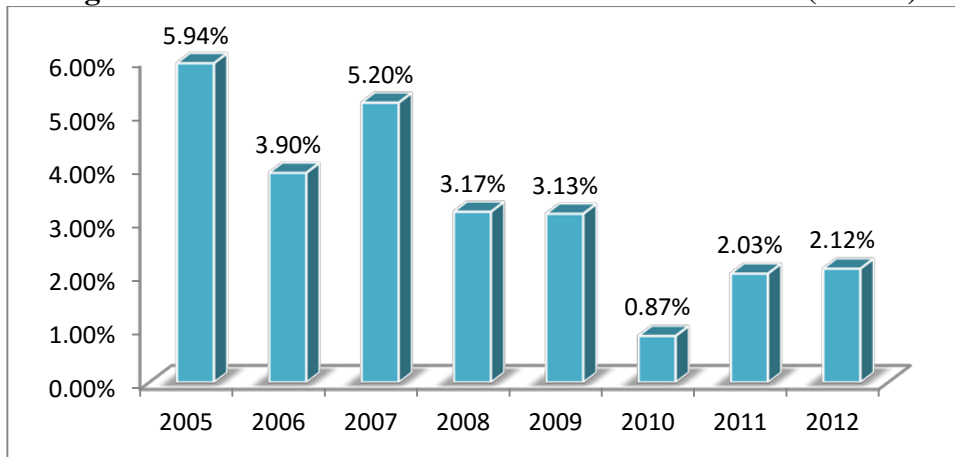
Figure 6.166 exhibits that the highest DTAR was recorded in 2005 at 5.94%. In 2006, there was a slight drop from the previous year to 3.90% and increased to 5.20% in 2007. The lowest DTAR was noted in 2010 at 0.87%.

Figure 6.167: RHB Islamic's Equity Multiplier (EM)
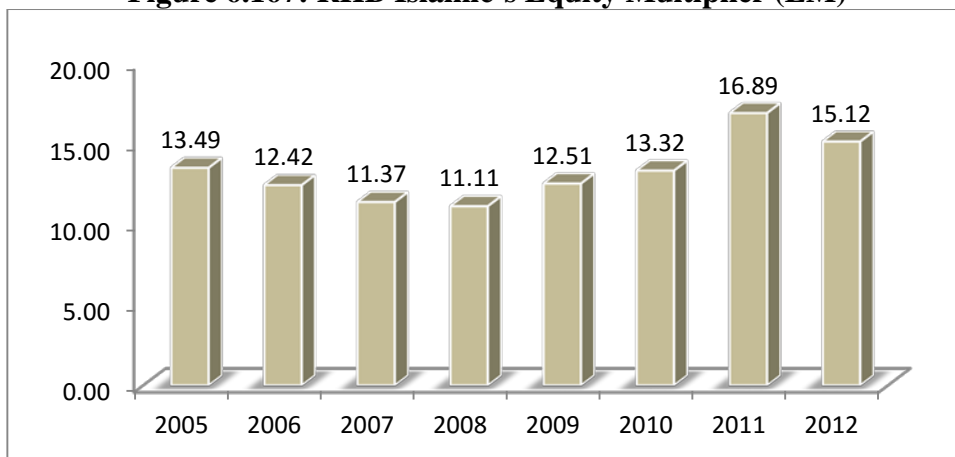
According to Figure 6.167, the bank's EM was calculated at 13.49 in 2005 and for the next three years, the bank faced a declining trend from 12.42 to 11.11 for 2006 and

2008 respectively. In 2009, there was an increase from the previous year of 1.40 to 12.51 and further to 13.32 in 2010. The highest EM is in 2011 at 16.89. By looking at the overall picture, the bank's EM is in a stable condition but the figures conclude that RHB Islamic is using more borrowing to finance its assets.

Commitment to economy and Muslim community ratios

Figure 6.168: RHB Islamic's Long-term Loan Ratio (LTA)
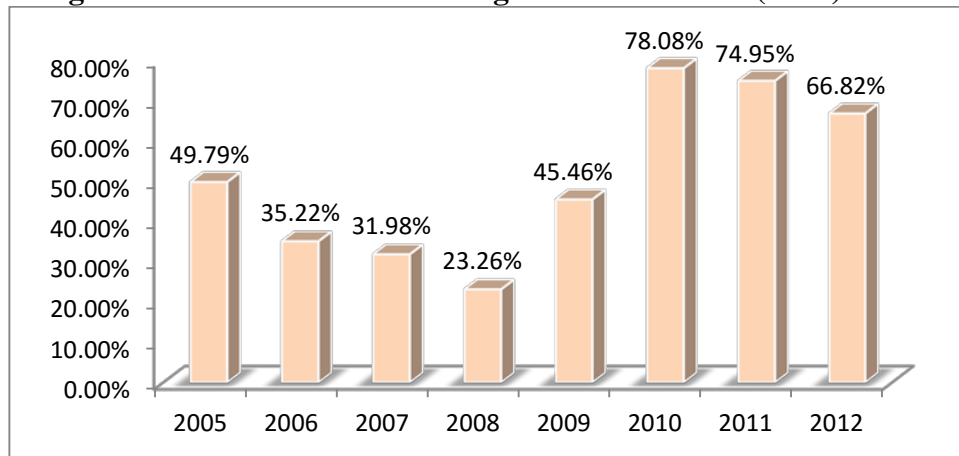
With reference to Figure 6.168, the bank's LTA indicates a decline throughout the first four-year period from 49.79% to 23.26% before it moved up to 78.08% in 2010. The bank is showing its concern towards its long-term development project that will benefit the bank's future in the industry.

Figure 6.169: RHB's Government Bond Investment (GBD)
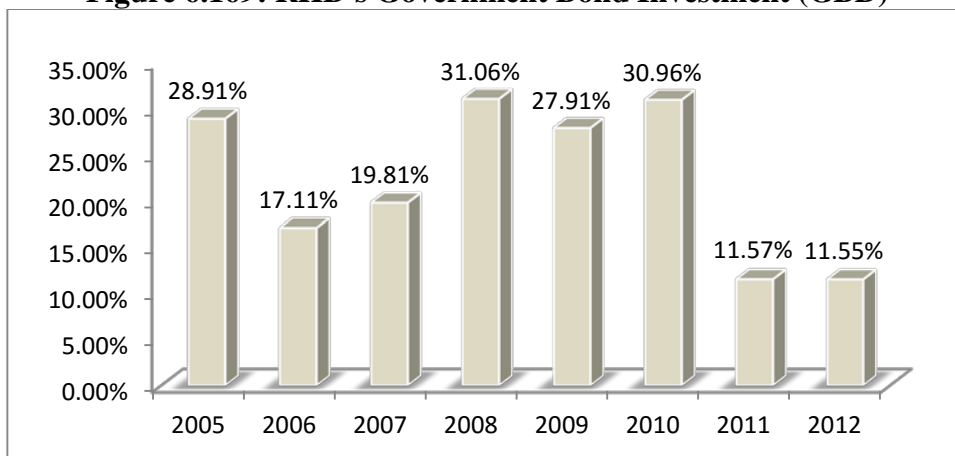
As depicted in Figure 6.169, the bank's GBD started high at 28.91% in 2005 and subsequently dropped to 17.11% in 2006. The performance for 2007 was better that

2006 with 19.81% and further increased to 31.06% in 2008. The upward performance did not sustain as in 2009, the GBD dropped to 27.91% and sharply declined to 11.57% and 11.55% in 2011 and 2012 respectively.

Figure 6.170: RHB Islamic's *Mudarabah-Musharakah* Ratio (MM/L)
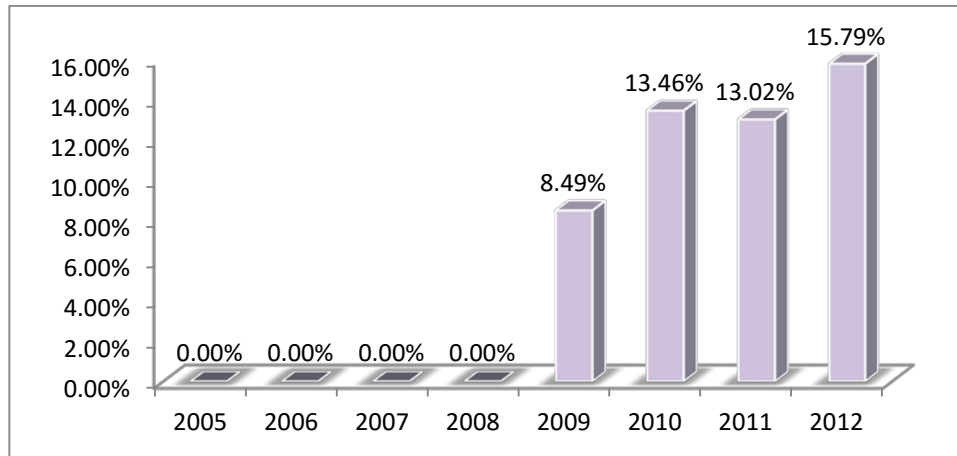
As shown in Figure 6.170, the bank's MM/L is in an increasing pattern even though they started at 0% for the first four years. The bank recorded 8.49% in 2009 and moved up as high as 15.79% as in 2012. This shows its commitment to embracing the concept of profit and loss sharing.

General Reflections on the Financial Performance of RHB Islamic

RHB Islamic faced an upward trend for its profitability performance during the 2005 to 2007 period and eventually encountered a declining trend for the following five years. The year 2007 highlighted the highest profitability performance of the bank. RHB Islamic's liquidity position started lower in the earlier years of operation and managed to sustain a strong liquidity position at the later years of operation. The risk exposure for the bank was at the highest in the year 2005 and 2010. In between the years, RHB Islamic maintained a minimal risk exposure that is supported by the economic downturn. In order to sustain its performance in the Islamic banking sector, RHB Islamic showed an increasing trend towards its long-term development project. In terms of commitment to the economy, the bank invested in government bonds but the investment was reduced slightly during the economic downturn. The bank did not have any *mudarabah* and *musharakah* transactions from the 2005 to 2008 but changed its

stance by introducing it starting 2009 onwards. The ratio has been in an increasing trend ever since.

6.2.16 Standard Chartered Saadiq Berhad

Profitability Ratios

Figure 6.171: Standard Chartered Saadiq's Profitability Ratios
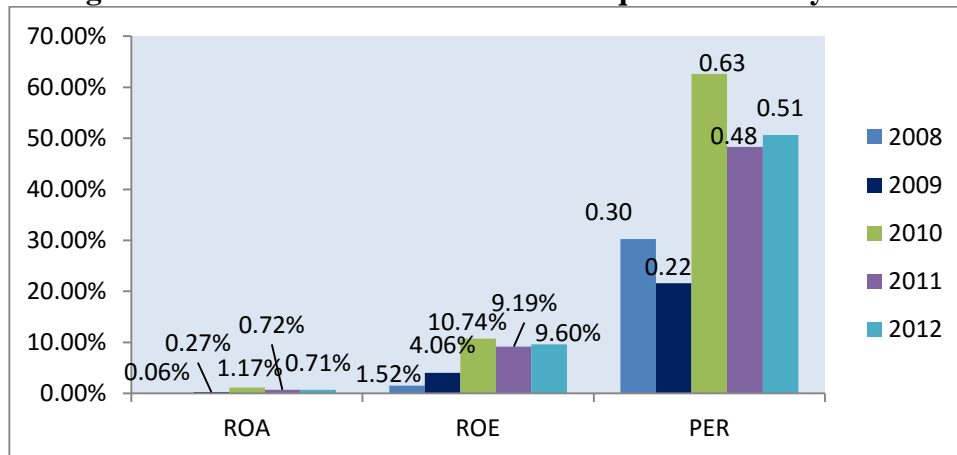
As illustrated in Figure 6.171, the ROA for Standard Chartered Saadiq signalled a positive growth from 0.06% in 2008 to 0.27% in the following year and 1.17% in 2010. Meanwhile, it is also noted that similar trend occurred towards the bank's ROE where it increased from 1.52% in 2008 to 4.06% in 2009 and 10.74% in 2010. The low ROA and ROE were due to its initial operation that commenced in middle of 2008. However, a different trend was noted for the PER of which a decreasing trend occurred from 0.30 in 2008 to 0.22 in 2009 but increased sharply in 2010 with 0.63. As the bank has set up in 2008 and is expanding its operation, the expenses incurred are high which support the drop of the PER in 2009.

Liquidity Ratios

Figure 6.172: Standard Chartered Saadiq's Liquidity Ratios
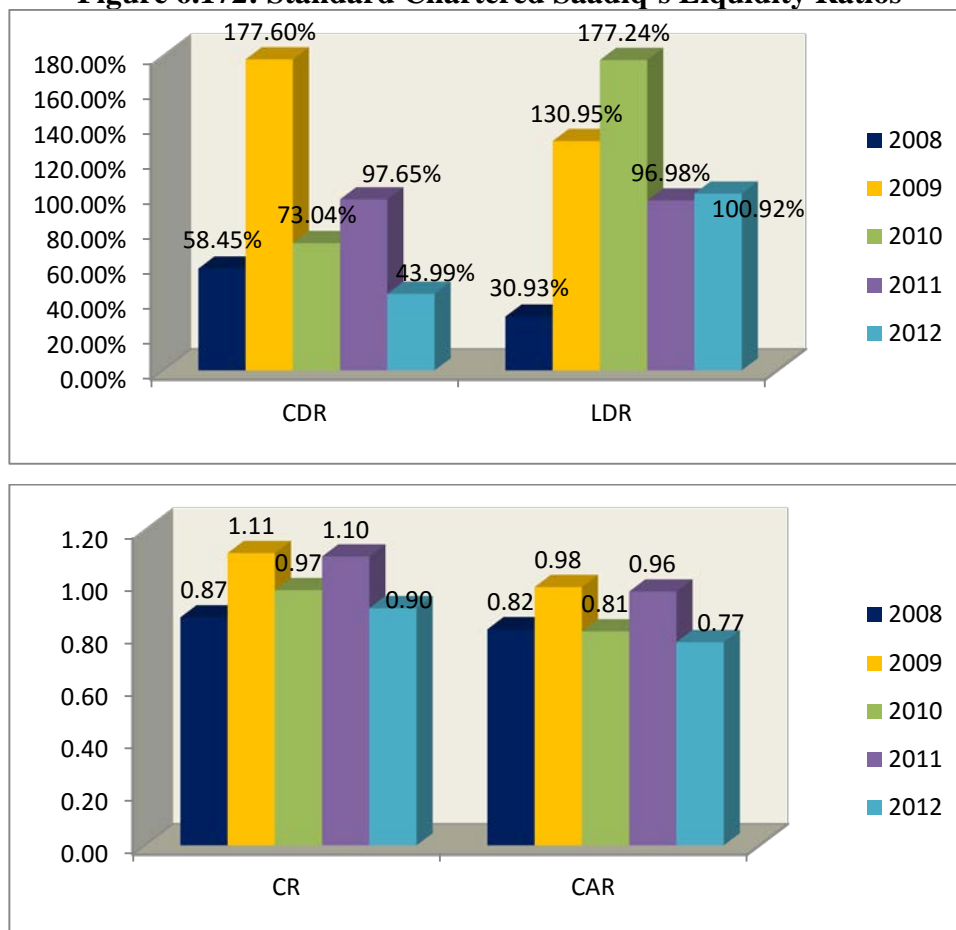
For the five-year period of operation, the overall bank's liquidity ratios show an inconsistent trend as shown in Figure 6.172. For LDR, the ratio records a deteriorating trend with 30.93% in 2008 and increased significantly in 2009 to 131% and further to 177% in 2010. This suggests that the bank's financing to its debtors surpassed the value of its depositors that may pose a problem to the bank in terms of sources of funds. This scenario also signifies that the bank is becoming less liquid.

Meanwhile, the rest of the liquidity ratios show a similar trend that peaked in 2009 but declined in 2010 onwards. The bank's CDR was at 58.45% in 2008 and increased to 177.6% in 2009 but reduced to 73% in 2010. The total increase of 1.19 between the two years summarised that the bank is taking active steps in building its trust among the depositors.

Similarly, both the CR and CAR show an up-and-down movement in alternate years between 2008 and 2012. The observed increased in LDR indicates that the bank's loan has increased and might lead to financial stress. However, as the bank has more liquid assets as noted by the CR, it will enable the bank to meet its short-term obligations.

Risk and Solvency Ratios

Figure 6.173: Standard Chartered Saadiq's Risk and Solvency Ratios
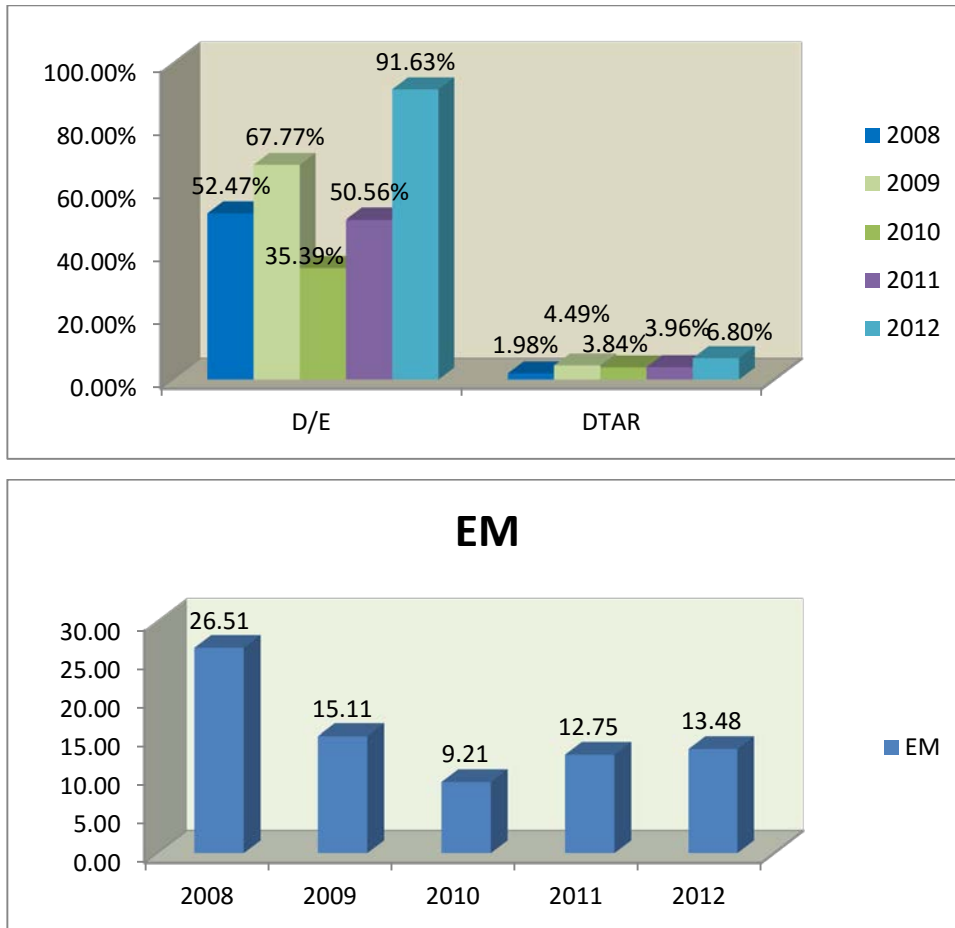
According to Figure 6.173, the bank's D/E is highest in 2012 at 91.63% as compared to the lowest of 35.39% in 2010. The increasing trend indicates that the bank is more reliant on debt in financing its assets. Likewise, the bank's DTAR also showed an upward trend with 1.98% in 2008, 4.49% in 2009 and the highest ratio is in 2012 with 6.80%. However, the EM signifies an overall declining trend from 26.51 in 2008 to 13.48 in 2012 and is still considered high in bankrolling its assets via debt.

Commitment to economy and Muslim community ratios

Figure 6.174: Standard Chartered Saadiq's Commitment to Economy and Muslim Community Ratios
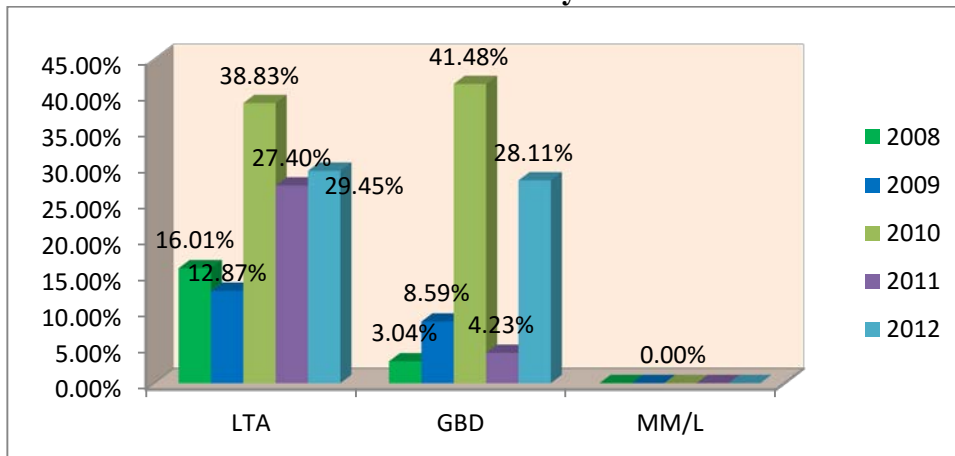
An upward trend is indicated by the LTA from 16.01% in 2008 to the highest in 2010 at 38.83% and dropped to 29.45% in 2012. Since the bank is still new, this positive trend in the first three years indicates the bank's commitment towards its long-term development project, particularly in Islamic banking. In 2008, the GBD for the bank also shows a similar movement from 3.04% in 2008 to 8.59% in 2009 and significantly increased to 41.48% in 2010. The computation of the MM/L ratio at 0.00 showed that the bank is fixing on other Islamic financial products rather than *mudarabah* and *musharakah*. All the trends can be observed in Figure 6.174.

General Reflections on the Financial Performance of Standard Chartered Saadiq

Standard Chartered Saadiq performed positive growth towards its profitability during 2008 and 2009 except for the PER, which indicates an inconsistent trend. The results were in line with the bank's early stage of its operation that requires additional expenses for further development. Based on the ratios, the five-year period showed a sustainable liquidity position of the bank. Meanwhile, the bank's risk and solvency position has increased within the periods due to the global economic conditions. Overall, the bank displays a positive support towards the contribution to the economy and Muslim community. However, the bank has yet to provide *mudarabah* and *musharakah* financing throughout the five-year period.

6.3   COMPARISON BETWEEN ISLAMIC BANKS

The following section assesses the selected ratios among the 16 Islamic banks in the country. The banks are ranked based on average for each ratios. The rankings are displayed in table and graph formats.

Table 6.1: Return on Assets (ROA)

ROA	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	0.94%	0.63%	0.46%	0.50%	0.34%	0.47%	0.63%	0.57%	10
Al Rajhi	N/A	-25.78%	-3.81%	-1.24%	0.18%	0.41%	0.06%	0.20%	-4.28%	16
Alliance Islamic	N/A	N/A	N/A	1.61%	1.00%	1.72%	0.90%	1.12%	1.27%	2
AmIslamic	N/A	1.58%	1.01%	1.02%	1.11%	1.87%	0.78%	0.93%	1.19%	3
Asian Finance	N/A	-1.26%	-0.30%	-0.86%	0.08%	-1.51%	-0.34%	-0.25%	-0.63%	15
Bank Islam	-3.20%	-8.63%	1.09%	1.65%	0.59%	1.36%	1.17%	1.14%	-0.61%	14
Bank Muamalat	0.31%	0.54%	0.35%	0.22%	N/A	0.59%	0.73%	0.42%	0.45%	11
CIMB Islamic	3.15%	0.12%	0.72%	0.39%	0.45%	2.20%	0.78%	0.78%	1.08%	4
Hong Leong Islamic	N/A	0.67%	0.91%	0.79%	0.81%	0.85%	0.55%	0.68%	0.75%	8
HSBC Amanah	N/A	N/A	N/A	0.46%	1.20%	0.66%	0.97%	1.10%	0.88%	5
KFH	0.08%	0.26%	0.43%	0.59%	-0.27%	-0.69%	-4.66%	0.69%	-0.45%	13
Maybank Islamic	N/A	N/A	N/A	0.43%	1.05%	0.92%	0.51%	0.97%	0.78%	7
OCBC Al Amin	N/A	N/A	N/A	-0.05%	0.36%	0.55%	0.38%	0.66%	0.38%	12
Public Islamic	N/A	N/A	N/A	1.51%	1.56%	1.68%	1.55%	1.40%	1.54%	1
RHB Islamic	0.54%	1.07%	1.41%	0.92%	0.57%	0.51%	0.67%	0.61%	0.79%	6
StanChart Saadiq	N/A	N/A	N/A	0.06%	0.27%	1.17%	0.72%	0.71%	0.59%	9

Figure 6.175: Comparison of ROA
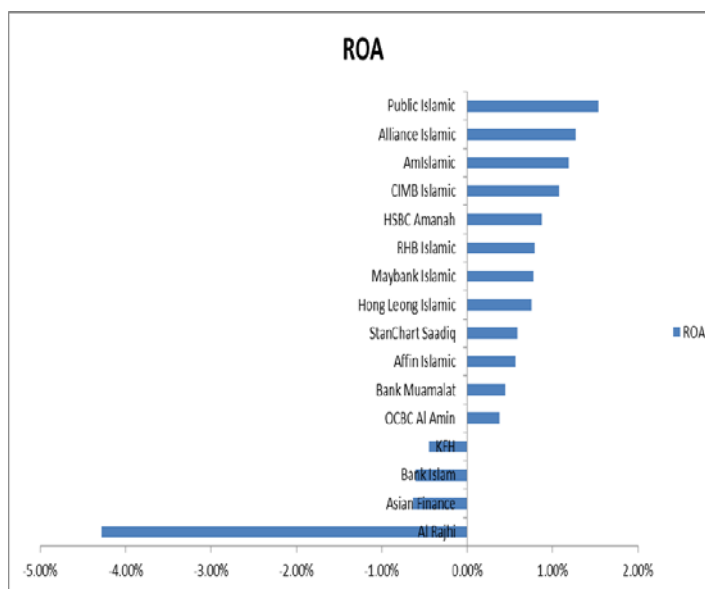
As can be seen in Table 6.1 and Figure 6.175, Public Islamic has the best average of ROAs among the 16 Islamic banks in Malaysia with Alliance Islamic and AmIslamic in second and third spot respectively. The best foreign Islamic bank for ROA is HSBC Amanah in fifth place.

The bottom four Islamic banks are Al Rajhi, Asian Finance, BIMB, and KFH with all the said banks having adverse overall ROAs.

Table 6.2: Return on Equity (ROE)

ROE	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	18.59%	16.74%	10.66%	8.24%	6.00%	10.38%	11.31%	**11.70%**	6
Al Rajhi	N/A	-33.40%	-22.61%	-16.21%	1.33%	3.38%	0.56%	1.94%	**-9.29%**	15
Alliance Islamic	N/A	N/A	N/A	4.59%	9.50%	20.12%	11.99%	13.27%	**11.89%**	5
AmIslamic	N/A	14.40%	9.19%	7.83%	12.21%	22.43%	11.20%	12.91%	**12.88%**	3
Asian Finance	N/A	-1.30%	-1.08%	-4.86%	0.48%	-8.78%	-1.73%	-1.52%	**-2.68%**	13
Bank Islam	-68.15%	-143.22%	20.37%	29.53%	10.57%	16.30%	13.37%	13.77%	**-13.43%**	16
Bank Muamalat	6.17%	10.17%	6.53%	4.55%	N/A	7.49%	9.81%	5.94%	**7.24%**	10
CIMB Islamic	19.48%	0.98%	9.63%	9.84%	14.21%	38.89%	17.36%	17.11%	**15.94%**	2
Hong Leong Islamic	N/A	7.96%	9.47%	9.65%	10.05%	10.28%	7.80%	12.63%	**9.69%**	8
HSBC Amanah	N/A	N/A	N/A	3.32%	7.76%	5.66%	11.19%	12.81%	**8.15%**	9
KFH	0.10%	2.00%	3.57%	3.17%	-1.35%	-3.68%	-32.43%	3.98%	**-3.08%**	14
Maybank Islamic	N/A	N/A	N/A	6.88%	13.97%	12.30%	9.45%	19.50%	**12.42%**	4
OCBC Al Amin	N/A	N/A	N/A	-0.90%	8.24%	8.10%	6.49%	9.77%	**6.34%**	12
Public Islamic	N/A	N/A	N/A	22.73%	21.76%	21.88%	21.56%	17.97%	**21.18%**	1
RHB Islamic	7.34%	13.25%	16.00%	10.18%	7.09%	6.85%	11.39%	9.20%	**10.16%**	7
StanChart Saadiq	N/A	N/A	N/A	1.52%	4.06%	10.74%	9.19%	9.60%	**7.02%**	11

Figure 6.176: Comparison of ROE
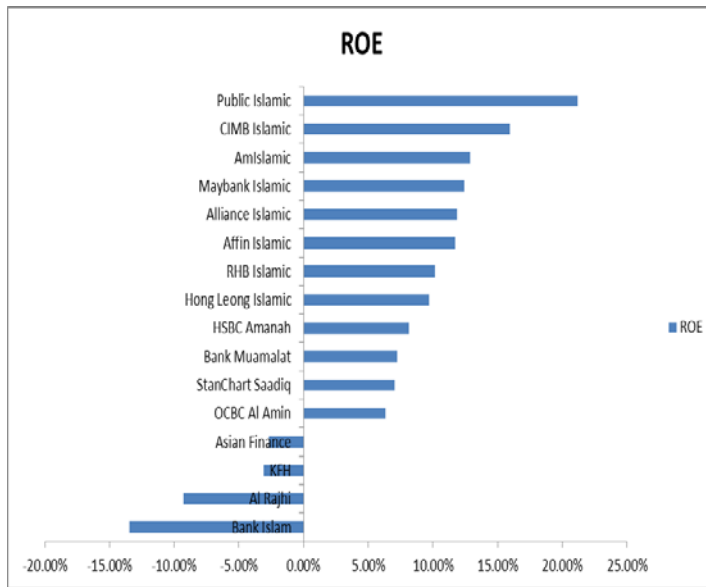
As for ROE, domestic Islamic banks also led the table with Public Islamic, CIMB Islamic, AmIslamic, Maybank Islamic, and Alliance Islamic making up the top five.

BIMB is at the foot of the table with Al Rajhi, KFH, and Asian Finance completing the bottom four of the ROE ranking. This suggests that, in general, the domestic Islamic banks are more efficient in generating profits using its shareholders' equity as compared to the foreign Islamic banks.

Table 6.3: Profit Expense Ratio (PER)

PER	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	1.40	0.83	0.42	0.43	0.29	0.54	0.76	**0.67**	8
Al Rajhi	N/A	-0.87	-1.01	-0.49	0.07	0.19	0.03	0.08	**-0.29**	15
Alliance Islamic	N/A	N/A	N/A	1.07	0.53	1.11	0.58	0.70	**0.80**	5
AmIslamic	N/A	1.13	0.63	0.50	0.60	1.21	0.56	0.74	**0.77**	6
Asian Finance	N/A	-1.00	-0.21	-0.49	0.04	-0.74	-0.19	-0.17	**-0.39**	16
Bank Islam	-1.35	-2.35	0.46	0.85	0.34	0.49	0.58	0.59	**-0.05**	13
Bank Muamalat	0.17	0.43	0.22	0.13	N/A	0.30	0.41	0.24	**0.27**	11
CIMB Islamic	0.68	0.16	0.88	0.60	0.58	3.05	0.94	0.78	**0.96**	4
Hong Leong Islamic	N/A	0.53	0.99	1.18	1.21	1.15	0.88	1.10	**1.00**	3
HSBC Amanah	N/A	N/A	N/A	0.56	0.46	0.28	0.62	0.64	**0.51**	9
KFH	0.02	0.18	0.26	0.32	-0.18	-0.44	-2.54	0.26	**-0.26**	14
Maybank Islamic	N/A	N/A	N/A	0.59	0.97	0.95	1.33	1.20	**1.01**	2
OCBC Al Amin	N/A	N/A	N/A	-0.31	0.25	0.26	0.19	0.37	**0.15**	12
Public Islamic	N/A	N/A	N/A	1.64	2.30	2.15	2.48	1.65	**2.05**	1
RHB Islamic	0.69	0.94	1.08	0.69	0.42	0.46	0.98	0.82	**0.76**	7
StanChart Saadiq	N/A	N/A	N/A	0.30	0.22	0.63	0.48	0.51	**0.43**	10

Figure 6.177: Comparison of PER
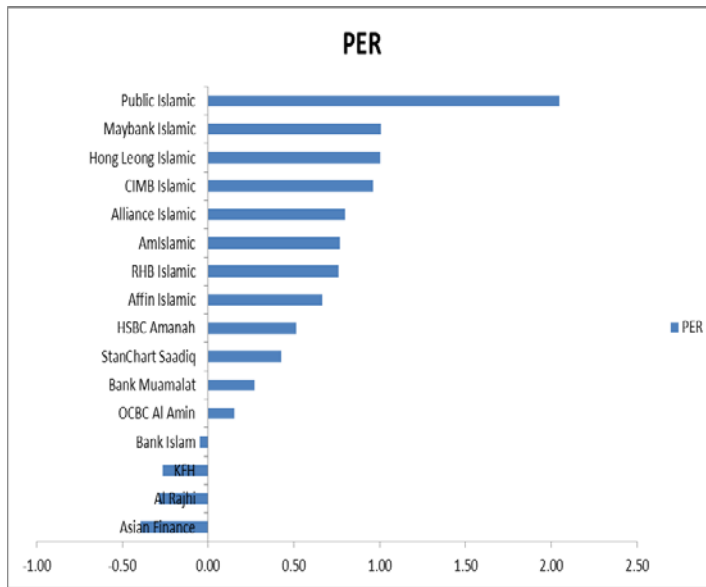
Public Islamic once again leads the table with the highest PER among the Islamic banks. Maybank Islamic and Hong Leong Islamic are placed in second and third position respectively as per Table 6.3 and Figure 6.177.

Once more, Asian Finance, with Al Rajhi, KFH, and BIMB placed in the bottom four in the profitability ratios. Similar to ROA and ROE, the results indicate that the domestic Islamic banks managed to generate more profits for every 1 RM spent as compared to the foreign counterparts.

Table 6.4: Cash Deposit Ratio (CDR)

CDR	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	77.42%	97.47%	57.96%	47.79%	47.62%	61.73%	47.31%	**62.47%**	**5**
Al Rajhi	N/A	497.49%	26.19%	38.33%	36.03%	33.52%	34.66%	34.45%	**100.10%**	**1**
Alliance Islamic	N/A	N/A	N/A	36.02%	11.00%	14.55%	3.60%	8.23%	**14.68%**	**16**
AmIslamic	N/A	34.73%	53.81%	30.99%	32.54%	29.31%	31.07%	15.81%	**32.61%**	**9**
Asian Finance	N/A	0.00%	133.72%	147.78%	114.26%	101.98%	96.86%	49.63%	**92.03%**	**3**
Bank Islam	24.03%	23.28%	37.27%	50.61%	34.06%	9.33%	11.90%	5.09%	**24.45%**	**13**
Bank Muamalat	41.74%	43.83%	39.06%	42.73%	N/A	39.30%	38.81%	27.10%	**38.94%**	**7**
CIMB Islamic	89.54%	86.25%	70.23%	54.20%	33.41%	31.87%	29.59%	20.98%	**52.01%**	**6**
Hong Leong Islamic	N/A	26.91%	30.97%	32.48%	33.62%	33.79%	38.18%	16.44%	**30.34%**	**12**
HSBC Amanah	N/A	N/A	N/A	33.34%	28.95%	39.89%	32.27%	23.69%	**31.63%**	**10**
KFH	377.92%	86.32%	82.37%	52.47%	72.07%	33.63%	45.64%	29.65%	**97.51%**	**2**
Maybank Islamic	N/A	N/A	N/A	16.35%	17.84%	16.86%	19.16%	21.72%	**18.38%**	**15**
OCBC Al Amin	N/A	N/A	N/A	24.00%	36.15%	20.69%	12.86%	5.32%	**19.80%**	**14**
Public Islamic	N/A	N/A	N/A	34.54%	51.46%	29.87%	35.11%	22.70%	**34.74%**	**8**
RHB Islamic	46.66%	40.49%	35.36%	20.99%	36.13%	12.29%	36.49%	20.51%	**31.12%**	**11**
StanChart Saadiq	N/A	N/A	N/A	58.45%	177.60%	73.04%	97.65%	43.99%	**90.15%**	**4**

Figure 6.178: Comparison of CDR
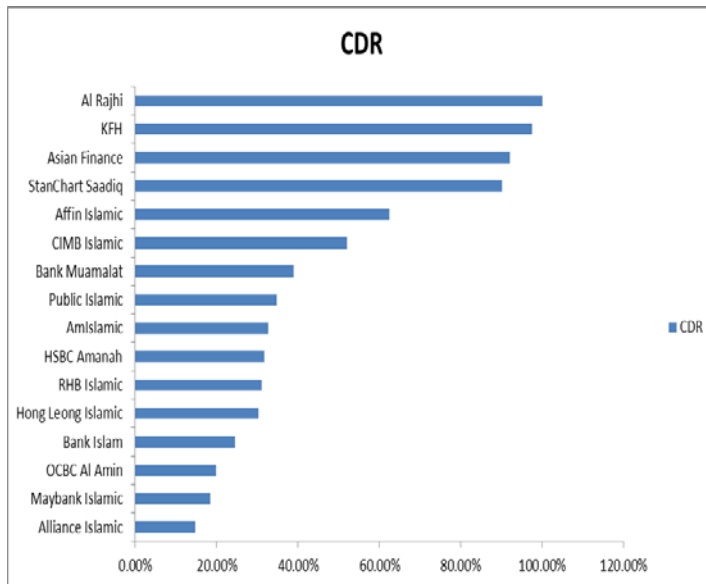
In contrast to the profitability ratios, Al Rajhi is on the top of the CDR table with KFH, Asian Finance, and Standard Chartered Saadiq, which shows the dominance of foreign Islamic banks in completing the top four.

The bottom three in CDR are occupied by Alliance Islamic, Maybank Islamic, and OCBC Al-Amin, which indicate their lower cash level with regards to total deposits. This can be concluded that the top four in this ratio, which consists of foreign Islamic banks, keep more cash available to its depositors as compared to the rest of the banks.

Table 6.5: Loan Deposit Ratio (LDR)

LDR	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	43.47%	46.76%	57.62%	62.25%	64.26%	58.50%	56.88%	**55.68%**	13
Al Rajhi	N/A	5.75%	90.02%	67.35%	85.49%	103.62%	96.49%	91.64%	**77.19%**	9
Alliance Islamic	N/A	N/A	N/A	114.66%	88.33%	83.58%	72.37%	84.93%	**88.78%**	7
AmIslamic	N/A	145.80%	136.37%	116.47%	96.61%	87.78%	86.87%	92.18%	**108.87%**	2
Asian Finance	N/A	0.00%	10.96%	25.81%	62.42%	64.05%	86.00%	93.50%	**48.96%**	15
Bank Islam	N/A	60.17%	47.91%	43.66%	38.33%	44.11%	50.08%	59.93%	**51.87%**	14
Bank Muamalat	42.27%	42.27%	45.88%	48.42%	N/A	44.44%	44.08%	49.80%	**45.31%**	16
CIMB Islamic	1.44%	66.67%	27.02%	43.70%	91.98%	93.76%	96.02%	93.78%	**64.30%**	11
Hong Leong Islamic	N/A	69.19%	69.95%	68.34%	47.93%	53.53%	58.28%	73.85%	**63.01%**	12
HSBC Amanah	N/A	N/A	N/A	90.22%	128.01%	122.57%	142.32%	100.80%	**116.79%**	1
KFH	0.00%	51.80%	146.38%	144.99%	167.22%	75.79%	110.17%	98.48%	**99.35%**	5
Maybank Islamic	N/A	N/A	N/A	111.69%	104.17%	96.85%	87.57%	86.37%	**97.33%**	6
OCBC Al Amin	N/A	N/A	N/A	77.86%	56.77%	85.14%	71.72%	95.89%	**77.48%**	8
Public Islamic	N/A	N/A	N/A	124.96%	110.70%	106.75%	95.98%	85.09%	**104.69%**	4
RHB Islamic	61.70%	62.09%	65.91%	72.84%	71.88%	87.61%	74.68%	92.36%	**73.63%**	10
StanChart Saadiq	N/A	N/A	N/A	30.93%	130.95%	177.24%	96.98%	100.92%	**107.40%**	3

Figure 6.179: Comparison of LDR
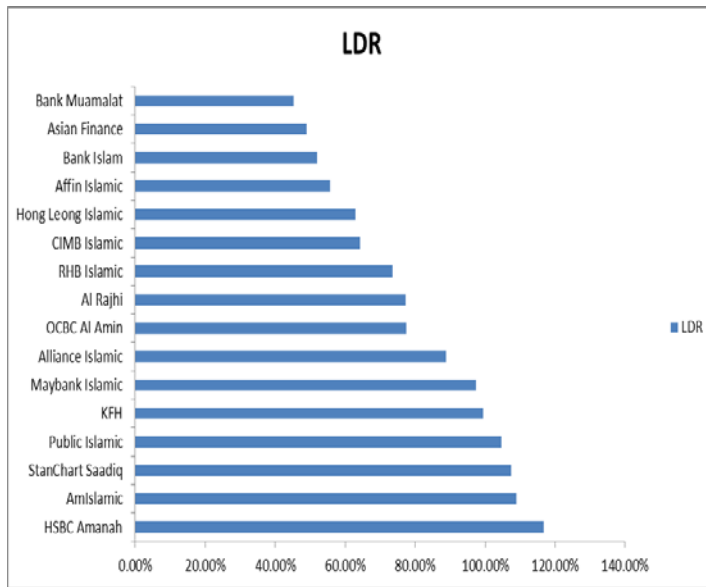
There are four Islamic banks who have the average of LDR more than 100% which means the banks are giving out loans more than their total deposits. The banks are HSBC Amanah, AmIslamic, Standard Chartered Saadiq, and Public Islamic.

As for banks with LDR lower than 50.00%, they are Asian Finance and BMMB. Banks with lower LDR are more favourable as compared to those with higher LDR. Lower LDR suggests a greater level of liquidity. The banks with higher LDR such as HSBC Amanah, AmIslamic, Standard Chartered Saadiq, and Public Islamic may face financial stress due to its excessive financing activities from the value of its customers' deposits. However, if the banks managed to turn the stress into profitability, it indicates the efficiency side of the bank's management as can be seen in the case of AmIslamic and Public Islamic.

Table 6.6: Current Ratio (CR)

CR	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	0.94	0.89	0.85	0.84	0.71	0.93	0.87	**0.86**	12
Al Rajhi	N/A	4.96	1.16	1.03	1.10	1.04	0.93	0.97	**1.60**	1
Alliance Islamic	N/A	N/A	N/A	1.47	0.96	0.45	0.74	0.83	**0.89**	10
AmIslamic	N/A	1.00	1.16	1.13	1.07	1.13	1.08	1.00	**1.08**	3
Asian Finance	N/A	0.03	1.37	1.13	1.10	1.19	1.02	0.97	**0.97**	7
Bank Islam	0.83	0.83	0.84	0.90	0.72	0.65	0.61	0.63	**0.75**	15
Bank Muamalat	0.81	0.85	0.81	0.85	N/A	0.83	0.83	0.77	**0.82**	14
CIMB Islamic	0.45	0.56	0.46	0.42	0.50	0.51	0.93	0.86	**0.59**	16
Hong Leong Islamic	N/A	0.94	0.97	0.85	0.79	0.75	0.82	0.76	**0.84**	13
HSBC Amanah	N/A	N/A	N/A	0.94	0.97	1.13	1.02	1.01	**1.01**	5
KFH	3.78	0.85	0.92	0.70	1.15	1.09	0.94	1.03	**1.31**	2
Maybank Islamic	N/A	N/A	N/A	0.97	0.97	0.99	0.92	0.91	**0.95**	8
OCBC Al Amin	N/A	N/A	N/A	0.91	1.07	1.13	0.74	0.73	**0.92**	9
Public Islamic	N/A	N/A	N/A	1.12	1.07	1.08	0.97	0.97	**1.04**	4
RHB Islamic	0.86	0.94	0.91	0.82	0.86	0.83	0.91	0.89	**0.88**	11
StanChart Saadiq	N/A	N/A	N/A	0.87	1.11	0.97	1.10	0.90	**0.99**	6

Figure 6.180: Comparison of CR
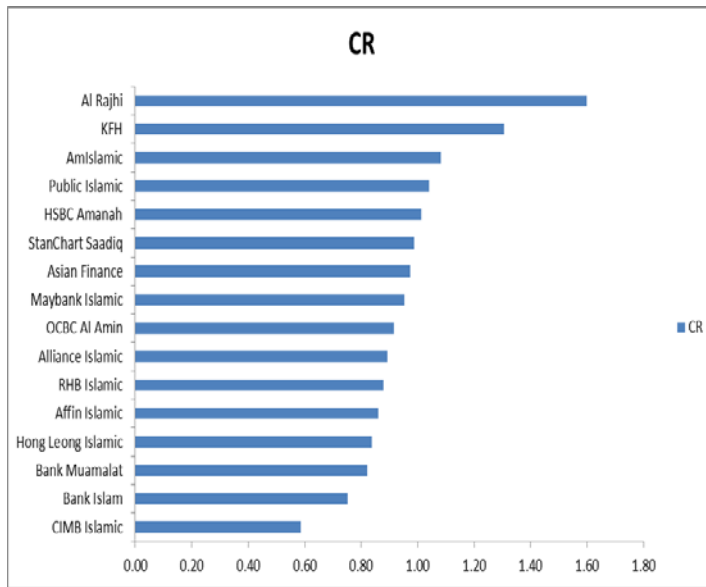
The foreign Islamic banks are superior in CR with Al Rajhi and KFH along with AmIslamic completing the top three table with the value of their current assets exceeding the value of their current liabilities. This suggests that these banks will not face any difficulties in fulfilling its short-term obligations since they maintained sufficient liquid assets.

On the other hand, CIMB Islamic and BMMB are at the bottom of the table with the average of 0.59 and 0.75 respectively.

Table 6.7: Current Asset Ratio (CAR)

CAR	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	0.87	0.85	0.81	0.78	0.65	0.85	0.80	**0.80**	8
Al Rajhi	N/A	0.72	0.95	0.94	0.94	0.91	0.81	0.84	**0.87**	4
Alliance Islamic	N/A	N/A	N/A	0.89	0.82	0.81	0.67	0.74	**0.79**	12
AmIslamic	N/A	0.86	0.95	0.93	0.93	1.00	0.89	0.83	**0.91**	2
Asian Finance	N/A	0.001	0.983	0.921	0.919	0.978	0.817	0.806	**0.78**	13
Bank Islam	0.78	0.82	0.79	0.83	0.66	0.59	0.54	0.57	**0.70**	16
Bank Muamalat	0.77	0.78	0.75	0.79	N/A	0.75	0.73	0.68	**0.75**	15
CIMB Islamic	0.76	0.77	0.81	0.72	0.80	0.80	0.85	0.79	**0.79**	11
Hong Leong Islamic	N/A	0.85	0.85	0.77	0.71	0.68	0.73	0.67	**0.75**	14
HSBC Amanah	N/A	N/A	N/A	0.80	0.81	0.98	0.91	0.86	**0.87**	3
KFH	0.89	0.73	0.80	0.88	0.88	0.80	0.73	0.78	**0.81**	7
Maybank Islamic	N/A	N/A	N/A	0.89	0.87	0.89	0.83	0.84	**0.86**	6
OCBC Al Amin	N/A	N/A	N/A	0.75	0.95	0.98	0.66	0.65	**0.80**	9
Public Islamic	N/A	N/A	N/A	0.98	0.99	0.99	0.89	0.87	**0.94**	1
RHB Islamic	0.78	0.85	0.83	0.74	0.78	0.76	0.84	0.76	**0.79**	10
StanChart Saadiq	N/A	N/A	N/A	0.82	0.98	0.81	0.96	0.77	**0.87**	5

Figure 6.181: Comparison of CAR
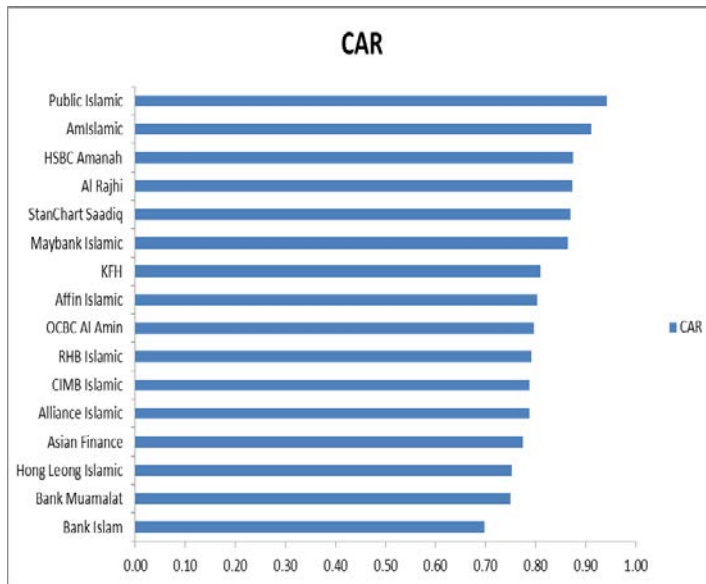
Public Islamic and AmIslamic scored above 0.9 of average CAR with HSBC Amanah, Al Rajhi, and Standard Chartered Saadiq followed closely with 0.87 in third, fourth, and fifth respectively.

BIMB, BMMB, and Hong Leong Islamic occupy the bottom three in CAR ranking with the average not more than 0.75. Banks with higher CAR possessed more liquid assets as compared to long-term assets.

Table 6.8: Debt-to-Equity ratio (D/E)

D/E	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	49.52%	15.41%	14.92%	8.16%	14.23%	77.53%	28.49%	**29.75%**	**8**
Al Rajhi	N/A	10.95%	9.13%	17.33%	7.35%	8.57%	7.94%	31.14%	**13.20%**	**3**
Alliance Islamic	N/A	N/A	N/A	11.83%	41.94%	27.56%	26.52%	21.97%	**25.96%**	**6**
AmIslamic	N/A	0.00%	62.81%	48.35%	63.15%	43.91%	78.95%	42.19%	**48.48%**	**13**
Asian Finance	N/A	3.25%	2.54%	2.41%	4.93%	5.33%	1.07%	0.45%	**2.85%**	**1**
Bank Islam	61.00%	39.00%	31.23%	76.75%	42.10%	38.59%	25.35%	28.82%	**42.86%**	**12**
Bank Muamalat	26.64%	28.62%	56.95%	106.52%	N/A	15.76%	30.90%	29.62%	**42.15%**	**10**
CIMB Islamic	5.25%	9.28%	31.55%	40.14%	30.24%	28.73%	36.34%	30.25%	**26.47%**	**7**
Hong Leong Islamic	N/A	10.33%	49.74%	70.56%	52.99%	66.67%	47.34%	81.70%	**54.19%**	**14**
HSBC Amanah	N/A	N/A	N/A	12.58%	9.29%	13.00%	13.82%	15.26%	**12.79%**	**2**
KFH	1.58%	10.90%	14.77%	12.05%	16.25%	19.57%	25.41%	14.43%	**14.37%**	**4**
Maybank Islamic	N/A	N/A	N/A	53.01%	38.33%	38.74%	16.82%	16.26%	**32.63%**	**9**
OCBC Al Amin	N/A	N/A	N/A	169.26%	64.72%	28.05%	37.49%	22.95%	**64.49%**	**16**
Public Islamic	N/A	N/A	N/A	99.46%	6.63%	8.70%	5.60%	7.16%	**25.51%**	**5**
RHB Islamic	80.08%	48.38%	59.12%	35.24%	39.22%	11.54%	34.34%	32.13%	**42.51%**	**11**
StanChart Saadiq	N/A	N/A	N/A	52.47%	67.77%	35.39%	50.56%	91.63%	**59.56%**	**15**

Figure 6.182: Comparison of D/E
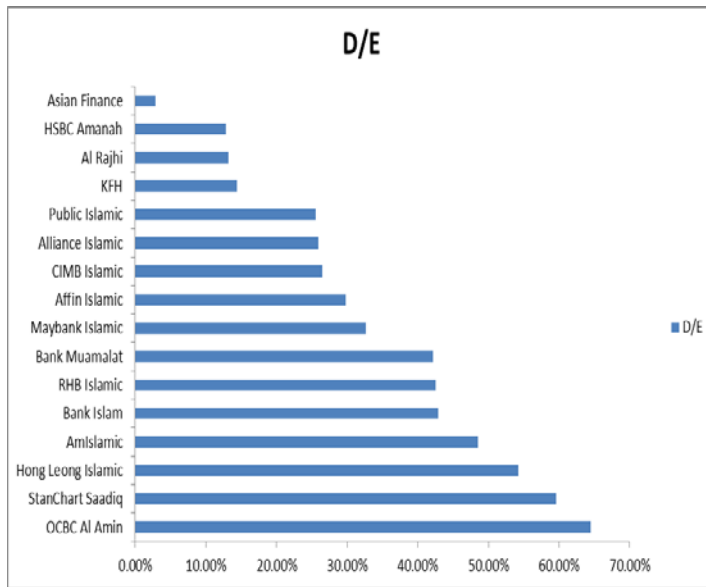
Asian Finance, HSBC Amanah, Al Rajhi, and KFH have the best average of D/E ratio. Table 6.8 and Figure 6.182 indicate that they are in a better position in managing any financial impact from asset depreciation or loan losses.

OCBC Al-Amin and Standard Chartered Saadiq are the bottom two with the average of 64.49% and 59.56% respectively.

Table 6.9: Debt to Assets Ratio (DTAR)

DR	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	2.50%	0.58%	0.65%	0.50%	0.82%	3.54%	1.59%	**1.45%**	4
Al Rajhi	N/A	8.45%	1.54%	1.33%	1.00%	1.05%	0.91%	3.17%	**2.49%**	9
Alliance Islamic	N/A	N/A	N/A	4.16%	4.41%	2.35%	1.99%	1.85%	**2.95%**	11
AmIslamic	N/A	0.00%	6.94%	6.31%	5.75%	3.41%	5.47%	3.03%	**4.42%**	16
Asian Finance	N/A	3.15%	0.70%	0.43%	0.78%	0.91%	0.21%	0.07%	**0.89%**	1
Bank Islam	2.87%	2.35%	1.72%	5.62%	2.34%	3.00%	2.21%	2.39%	**2.81%**	10
Bank Muamalat	1.36%	1.52%	3.04%	5.19%	N/A	1.24%	2.30%	2.07%	**2.39%**	7
CIMB Islamic	0.85%	1.16%	2.36%	1.60%	0.96%	1.07%	1.63%	1.38%	**1.38%**	2
Hong Leong Islamic	N/A	0.87%	4.80%	5.78%	4.29%	5.48%	3.36%	4.42%	**4.14%**	14
HSBC Amanah	N/A	N/A	N/A	1.73%	1.44%	1.51%	1.19%	1.31%	**1.43%**	3
KFH	1.19%	1.41%	1.77%	2.22%	3.22%	3.68%	3.65%	2.48%	**2.45%**	8
Maybank Islamic	N/A	N/A	N/A	3.32%	2.88%	2.89%	0.92%	0.81%	**2.16%**	6
OCBC Al Amin	N/A	N/A	N/A	8.91%	2.79%	1.92%	2.17%	1.56%	**3.47%**	13
Public Islamic	N/A	N/A	N/A	5.95%	0.44%	0.67%	0.40%	0.56%	**1.60%**	5
RHB Islamic	5.94%	3.90%	5.20%	3.17%	3.13%	0.87%	2.03%	2.12%	**3.30%**	12
StanChart Saadiq	N/A	N/A	N/A	1.98%	4.49%	3.84%	3.96%	6.80%	**4.21%**	15

Figure 6.183: Comparison of DTAR
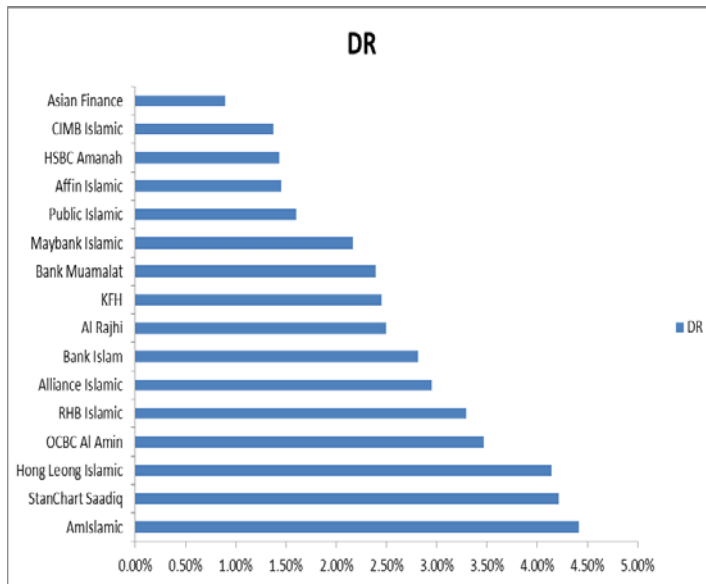
According to Table 6.9 and Figure 6.183, Asian Finance, CIMB Islamic, and HSBC Amanah were the top three of DR or DTAR. This signifies that the banks have a higher capability to serve its liabilities with the amount of the assets they possess and are less reliant on debt as compared to the remaining Islamic banks in Malaysia.

Banks with DTAR of 4% and above are AmIslamic, Standard Chartered Saadiq, and Hong Leong Islamic.

Table 6.10: Equity Multiplier (EM)

EM	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	19.84	26.60	23.11	16.39	17.43	21.87	17.89	**20.45**	16
Al Rajhi	N/A	1.30	5.94	13.03	7.32	8.16	8.77	9.81	**7.76**	3
Alliance Islamic	N/A	N/A	N/A	2.84	9.50	11.72	13.30	11.90	**9.85**	5
AmIslamic	N/A	9.14	9.05	7.67	10.98	11.97	14.45	13.91	**11.02**	6
Asian Finance	N/A	1.03	3.62	5.63	6.34	5.83	5.11	5.96	**4.79**	1
Bank Islam	21.27	16.59	18.70	17.86	17.95	12.02	11.47	12.06	**15.99**	11
Bank Muamalat	19.61	18.86	18.72	20.50	N/A	12.67	13.45	14.31	**16.88**	13
CIMB Islamic	6.19	7.97	13.37	25.03	31.38	17.64	22.29	21.86	**18.22**	15
Hong Leong Islamic	N/A	11.89	10.37	12.22	12.35	12.17	14.07	18.47	**13.08**	7
HSBC Amanah	N/A	N/A	N/A	7.29	6.47	8.61	11.58	11.68	**9.13**	4
KFH	1.33	7.74	8.36	5.42	5.05	5.32	6.96	5.81	**5.75**	2
Maybank Islamic	N/A	N/A	N/A	15.98	13.39	13.30	18.37	20.12	**16.23**	12
OCBC Al Amin	N/A	N/A	N/A	19.00	23.17	14.62	17.27	14.75	**17.76**	14
Public Islamic	N/A	N/A	N/A	15.05	13.99	13.03	13.91	12.81	**13.76**	9
RHB Islamic	13.49	12.42	11.37	11.11	12.51	13.32	16.89	15.12	**13.28**	8
StanChart Saadiq	N/A	N/A	N/A	26.51	15.11	9.21	12.75	13.48	**15.41**	10

Figure 6.184: Comparison of EM
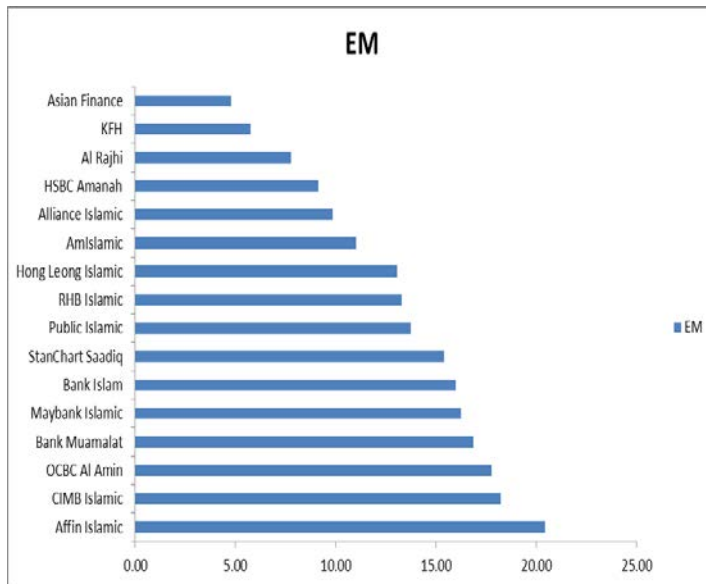
Overall, Islamic banks in Malaysia are highly reliant on debt in financing its assets with BMMB, OCBC Al-Amin, CIMB Islamic, and Affin Islamic with the highest EM of 16.88, 17.76, 18.22 and 20.45 respectively.

Asian Finance, KFH, Al Rajhi, and HSBC Amanah are least dependent on debt in expanding their business.

High EM indicates the dependence of the banks to purchase its assets via debt instead of equity. However, higher EM is not necessarily bad if the banks still make high profits, which indicates efficient business management.

Table 6.11: Long-Term Loan Ratio (LTA)

LTA	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	22.72%	28.12%	29.07%	29.97%	31.42%	73.59%	31.14%	35.14%	9
Al Rajhi	N/A	97.63%	8.29%	14.36%	20.15%	7.67%	12.20%	16.92%	25.32%	12
Alliance Islamic	N/A	N/A	N/A	27.74%	24.41%	15.48%	13.10%	32.49%	22.65%	15
AmIslamic	N/A	31.54%	57.02%	53.72%	55.36%	78.42%	52.53%	51.86%	54.35%	4
Asian Finance	N/A	0.00%	0.11%	18.44%	9.03%	48.96%	74.36%	86.15%	33.86%	10
Bank Islam	22.69%	18.66%	25.68%	33.37%	57.70%	74.82%	45.67%	35.81%	39.30%	8
Bank Muamalat	74.19%	21.90%	36.55%	40.65%	N/A	59.65%	67.54%	71.58%	53.15%	5
CIMB Islamic	0.29%	4.41%	24.63%	20.15%	26.16%	23.88%	25.51%	32.80%	19.73%	16
Hong Leong Islamic	N/A	74.75%	66.19%	62.46%	59.37%	48.86%	45.55%	40.99%	56.88%	3
HSBC Amanah	N/A	N/A	N/A	49.61%	46.32%	35.08%	40.77%	49.51%	44.25%	7
KFH	0.00%	12.64%	22.59%	28.56%	31.12%	21.85%	32.44%	37.25%	23.31%	14
Maybank Islamic	N/A	N/A	N/A	34.47%	60.71%	65.12%	66.10%	71.77%	59.63%	2
OCBC Al Amin	N/A	N/A	N/A	45.52%	33.34%	26.34%	25.21%	33.95%	32.87%	11
Public Islamic	N/A	N/A	N/A	70.99%	71.21%	72.81%	73.79%	74.43%	72.65%	1
RHB Islamic	49.79%	35.22%	31.98%	23.26%	45.46%	78.08%	74.95%	66.82%	50.69%	6
StanChart Saadiq	N/A	N/A	N/A	16.01%	12.87%	38.83%	27.40%	29.45%	24.91%	13

Figure 6.185: Comparison of LTA
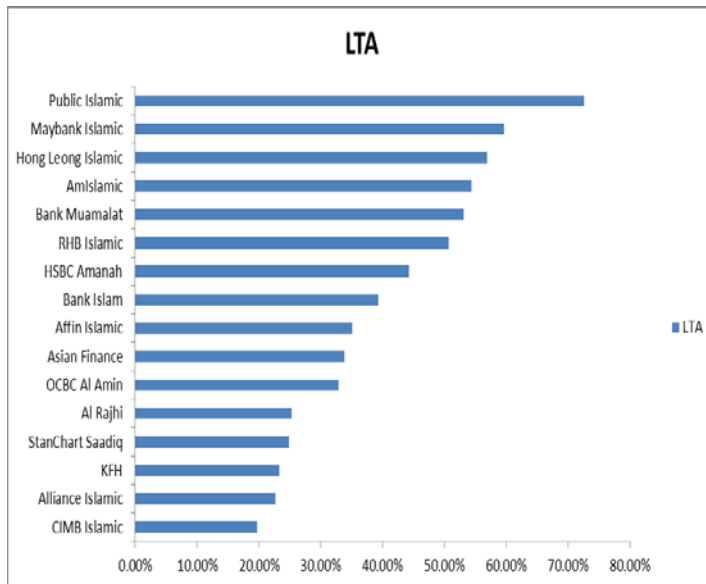
As depicted in Table 6.11 and Figure 6.185, Public Islamic and Maybank Islamic have an average of at least 60.00% with regards to supporting long-term projects.

The banks with lowest percentage of long-term loans in their accounts are CIMMB Islamic (19.73%), Alliance Islamic (22.65%), and KFH (23.31%).

Table 6.12: Government Bond Investment (GBD)

GBD	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	16.71%	20.88%	25.21%	29.92%	24.17%	11.50%	14.13%	20.36%	6
Al Rajhi	N/A	0.00%	0.00%	1.88%	1.84%	0.00%	0.00%	4.99%	1.24%	16
Alliance Islamic	N/A	N/A	N/A	15.72%	17.51%	8.72%	21.73%	20.80%	16.90%	10
AmIslamic	N/A	2.71%	3.10%	8.09%	7.61%	2.19%	4.97%	1.60%	4.32%	14
Asian Finance	N/A	0.00%	3.95%	8.09%	11.34%	4.48%	3.20%	0.32%	4.48%	13
Bank Islam	25.71%	17.75%	22.69%	18.09%	35.49%	47.42%	13.34%	8.51%	23.62%	1
Bank Muamalat	24.41%	23.43%	27.40%	23.33%	N/A	27.10%	12.34%	20.76%	22.68%	2
CIMB Islamic	4.60%	24.66%	18.10%	34.35%	27.65%	5.93%	8.31%	14.49%	17.26%	7
Hong Leong Islamic	N/A	15.73%	16.91%	29.56%	32.65%	5.12%	21.12%	33.70%	22.11%	4
HSBC Amanah	N/A	N/A	N/A	25.68%	20.69%	11.08%	11.22%	16.62%	17.06%	9
KFH	0.00%	1.92%	0.46%	2.36%	2.84%	2.48%	2.91%	8.10%	2.63%	15
Maybank Islamic	N/A	N/A	N/A	14.51%	13.83%	9.78%	9.92%	8.92%	11.39%	11
OCBC Al Amin	N/A	N/A	N/A	16.51%	4.69%	20.06%	27.62%	39.65%	21.70%	5
Public Islamic	N/A	N/A	N/A	3.97%	6.86%	11.24%	7.00%	8.74%	7.56%	12
RHB Islamic	28.91%	17.11%	19.81%	31.06%	27.91%	30.96%	11.57%	11.55%	22.36%	3
StanChart Saadiq	N/A	N/A	N/A	3.04%	8.59%	41.48%	4.23%	28.11%	17.09%	8

Figure 6.186: Comparison of GBD
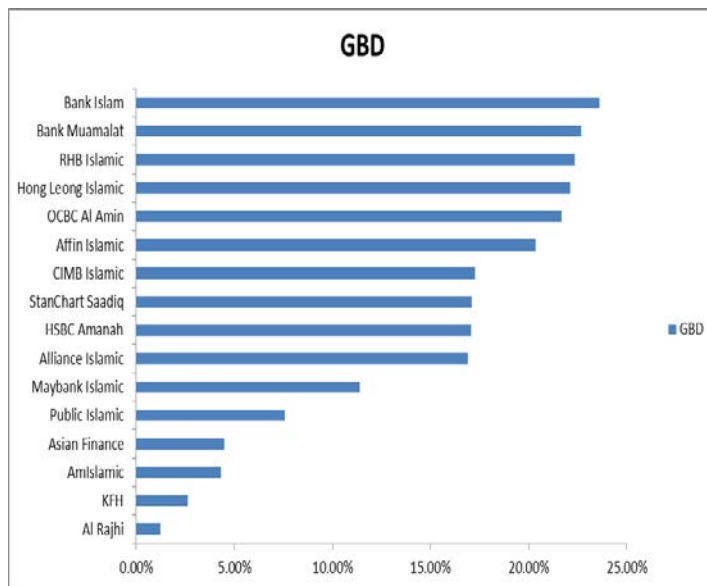
BIMB, BMMB, RHB Islamic, Hong Leong Islamic, OCBC Al-Amin, and Affin Islamic invested on average minimum of 20.00% of its deposits received from depositors into the Malaysian government related investments, which make up the top six in the table.

The banks with lowest GBD are Al Rajhi, KFH, AmIslamic, Asian Finance, and Public Islamic, which indicates that they prefer to invest their deposits somewhere else such as in private or international funds.

Table 6.13: *Mudarabah-Musharakah* Ratio (MM/L)

MML	2005	2006	2007	2008	2009	2010	2011	2012	Mean	Rank
Affin Islamic	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
Al Rajhi	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
Alliance Islamic	N/A	N/A	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
AmIslamic	N/A	0.31%	0.30%	0.22%	0.00%	0.00%	0.00%	0.00%	0.12%	7
Asian Finance	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
Bank Islam	0.78%	0.25%	0.12%	0.10%	0.09%	0.05%	0.00%	0.00%	0.17%	5
Bank Muamalat	0.03%	0.01%	0.14%	0.07%	N/A	0.44%	0.33%	0.00%	0.15%	6
CIMB Islamic	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
Hong Leong Islamic	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
HSBC Amanah	N/A	N/A	N/A	0.00%	1.46%	11.93%	21.93%	38.38%	14.74%	1
KFH	0.00%	28.26%	12.50%	8.81%	9.44%	9.38%	9.23%	8.81%	10.81%	2
Maybank Islamic	N/A	N/A	N/A	0.52%	1.39%	3.76%	5.54%	7.06%	3.66%	4
OCBC Al Amin	N/A	N/A	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9
Public Islamic	N/A	N/A	N/A	0.00%	0.00%	0.00%	0.00%	0.22%	0.04%	8
RHB Islamic	0.00%	0.00%	0.00%	0.00%	8.49%	13.46%	13.02%	15.79%	6.35%	3
StanChart Saadiq	N/A	N/A	N/A	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9

Figure 6.187: Comparison of MM/L
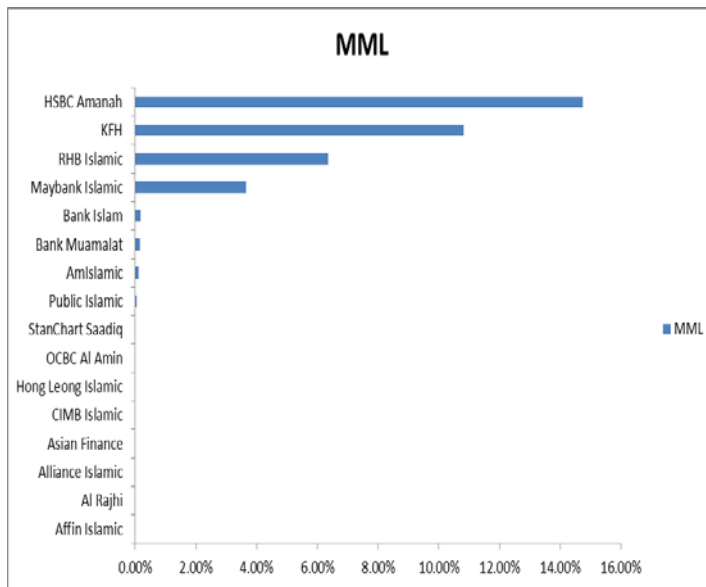
Based on Table 6.13 and Figure 6.187, there are only eight Islamic banks involved with *mudarabah* or *musharakah* contracts since the beginning of their operations for each bank until 2012. The banks are HSBC Amanah with the average of 14.74%, KFH (10.81%), RHB Islamic (6.35%), Maybank Islamic (3.66)%, BIMB (0.17%), BMMB (0.15%), AmIslamic (0.12%), and Public Islamic (0.04%).

The other half of the population as of 2012 are yet to venture into either *mudarabah* or *musharakah*.

6.4 COMPARISON BETWEEN DOMESTIC AND FOREIGN ISLAMIC BANKS

The following section compares the performance by banking sector, grouped between domestic and Islamic banks in the country from 2008 to 2012. The results are presented by year including the average. The results are compared between the domestic Islamic banks, foreign Islamic banks, and overall scores of the industry.

Table 6.14: Domestic vs. Foreign Islamic Banks Profitability Ratios

	2008	2009	2010	2011	2012	Mean	Standard Deviation
Profitability							
1. Return on Assets (ROA)							
Domestic	0.91%	0.79%	1.20%	0.81%	0.87%	**0.92%**	**0.003**
Foreign	-0.18%	0.30%	0.10%	-0.48%	0.52%	**0.05%**	**0.007**
Overall	**0.51%**	**0.60%**	**0.79%**	**0.33%**	**0.74%**	**0.59%**	**0.005**

	2. Return on Equity (ROE)						
Domestic	11.84%	11.21%	16.25%	12.43%	13.36%	**13.02%**	**0.044**
Foreign	-2.32%	3.42%	2.57%	-1.12%	6.10%	**1.73%**	**0.065**
Overall	**6.53%**	**8.29%**	**11.12%**	**7.35%**	**10.64%**	**8.79%**	**0.052**

	3. Profit Expense Ratio (PER)						
Domestic	0.78	0.75	1.12	0.93	0.86	**0.89**	**0.311**
Foreign	-0.02	0.14	0.03	-0.24	0.28	**0.04**	**0.388**
Overall	**0.48**	**0.52**	**0.71**	**0.49**	**0.64**	**0.57**	**0.340**

For the purpose of comparison, all of the selected 16 Islamic banks as per previous sections have been chosen to form a comprehensive picture of the industry. It comprises 10 domestic Islamic banks and six foreign Islamic banks. With the aim of getting the highest number of observations, the researcher selected data from 2008 onwards since all of the banks were established that year or earlier.

Based on Table 6.14, domestic Islamic banks displayed better performance as compared to the foreign counterparts with an average of 0.92% in ROA while 0.05% for foreign Islamic banks. Foreign Islamic banks suffered negative ROA in 2008 and 2011, unlike the domestic Islamic banks that maintained positive ROA throughout 2008 to 2012. The domestic Islamic banks showed an inconsistent pattern with 0.91% and 0.79% in

2008 and 2009 respectively before increasing to 1.20% in 2010. On the other hand, the foreign Islamic banks showed a progressing sign with -0.18% in 2008, 0.30% in 2009 and finally settled at 0.52% in 2012.

As for ROE, foreign Islamic banks have a similar negative average with -2.32% whereas the domestic Islamic banks have an average of 11.84% during 2008. Domestic Islamic banks hit the worst ROE in 2009 with 11.21% and performed the best in 2010 with 16.25%. Foreign Islamic banks suffered the poorest in 2008 but have a maximum in 2012 at 6.10% and have the highest profitability throughout the five-year period.

Based on PER, domestic Islamic banks are running at better efficiency levels and can generate higher profits than the foreign Islamic banks. Domestic Islamic banks managed to get the highest PER in 2010 with 1.12 while the foreign Islamic banks achieved their best PER in 2012 with 0.28.

Overall, domestic Islamic banks show a better performance in profitability in ROA, ROE, and PER. Both types of banks need to do better in ROA with foreign Islamic banks showing a better improvement pattern.

Table 6.15: Domestic vs. Foreign Islamic Banks Liquidity Ratios

	2008	2009	2010	2011	2012	Mean	Standard Deviation
Liquidity							
4. Cash Deposit Ratio (CDR)							
Domestic	37.32%	34.06%	26.48%	30.56%	20.59%	**29.80%**	**0.096**
Foreign	59.06%	77.51%	50.46%	53.33%	31.12%	**54.30%**	**0.208**
Overall	**45.47%**	**50.35%**	**35.47%**	**39.10%**	**24.54%**	**29.80%**	**0.096**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
5. Loan Deposit Ratio (LDR)							
Domestic	79.98%	76.06%	76.26%	72.44%	77.52%	**76.45%**	**0.110**
Foreign	72.86%	105.14%	104.73%	100.61%	96.87%	**96.04%**	**0.277**
Overall	**77.31%**	**86.97%**	**86.94%**	**83.01%**	**84.78%**	**83.80%**	**0.173**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
6. Current Ratio (CR)							
Domestic	0.93	0.86	0.79	0.87	0.85	**0.86**	**0.108**
Foreign	0.93	1.08	1.09	0.96	0.94	**1.00**	**0.115**
Overall	**0.93**	**0.95**	**0.91**	**0.90**	**0.88**	**0.91**	**0.110**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
7. Current Asset Ratio (CAR)							
Domestic	0.83	0.81	0.79	0.78	0.76	**0.79**	**0.059**
Foreign	0.85	0.91	0.91	0.82	0.79	**0.86**	**0.088**
Overall	**0.84**	**0.85**	**0.84**	**0.80**	**0.77**	**0.82**	**0.070**

In contrast to profitability, foreign Islamic banks are in better position in terms of liquidity than the domestic Islamic banks. Based on Table 6.15, foreign Islamic banks are almost twice better in CDR than the domestic Islamic banks with an average of 54.30% and 29.80% respectively. The local banks show a diminishing trend over the five-year period. The highest CDR was in 2008 at 37.32%, and the lowest was in 2012 at 20.59%. Similar to domestic Islamic banks, the foreign Islamic banks also in declining pattern in their CDR but still maintaining a high percentage of cash against its amount deposits with 59.06% in 2008. They keep their cash level above the deposits at the highest level in 2009 with 77.51%, and their lowest CDR was in 2012 with 31.12%.

As can be seen in Table 6.15, the only ratio in which the domestic Islamic banks perform better than the foreign Islamic banks is in LDR where the domestic Islamic banks scored 76.45% and foreign Islamic banks at 96.04%. Both are moving in a different direction with the local banks in a declining trend while the foreign Islamic

banks are in an increasing pattern. Domestic Islamic banks' LDR at the highest point in 2008 with 79.98% whereas the international banks at their lowest with 72.86% during the same year. In contrast, 2009 shows that foreign Islamic banks at the worst point at 105.14% while domestic Islamic bank at their best with 72.44% in 2011.

Based on CR, both types of banks appear to have inadequate capability to cover any short-term needs with limited short-term assets available at their disposal. Nevertheless, the foreign Islamic banks show their superiority with the average of 1.00 while the local banks at modest 0.86. Both types of banks started equally at 0.93 in 2008. Domestic Islamic banks are in a declining trend with 0.86 in 2009, 0.79 in 2010, 0.87 in 2011 and 0.85 in 2012. Conversely, foreign Islamic banks managed to achieve as high as 1.09 in 2010 before settling at 0.94 in 2012.

Another ratio that shows little difference between the two in terms of liquidity is CAR. Although there was a minimal difference between the two, foreign Islamic banks came on top with the average of 0.86 while the domestic Islamic banks with 0.79. The foreign Islamic banks are in a positive trend with the latest result shows that their CAR reported at 0.79 as compared to 0.76 for the domestic Islamic banks.

In general, foreign Islamic banks have the upper hand in liquidity as compared to the local banks. The foreign Islamic banks performed best on all the liquidity ratios except LDR.

Table 6.16: Domestic vs. Foreign Islamic Banks Risk and Solvency Ratios

	2008	2009	2010	2011	2012	Mean	Standard Deviation
	Risk and solvency						
	8. Debt Equity Ratio (D/E)						
Domestic	50.72%	42.93%	29.44%	37.97%	31.86%	**38.58%**	**0.198**
Foreign	44.35%	28.39%	18.32%	22.71%	29.31%	**28.62%**	**0.170**
Overall	**48.33%**	**37.47%**	**25.27%**	**32.25%**	**30.90%**	**34.85%**	**0.187**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
	9. Debt to Asset Ratio (DTAR)						
Domestic	3.96%	2.99%	2.18%	2.39%	2.02%	**2.71%**	**0.013**
Foreign	2.77%	2.29%	2.15%	2.02%	2.57%	**2.36%**	**0.012**
Overall	**3.51%**	**2.73%**	**2.17%**	**2.25%**	**2.23%**	**2.58%**	**0.012**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
	10. Equity Multiplier (EM)						
Domestic	14.96	15.89	13.54	16.01	15.84	**15.25**	**3.053**
Foreign	12.81	10.58	8.62	10.41	10.25	**10.53**	**2.654**
Overall	**14.96**	**15.89**	**13.54**	**16.01**	**15.84**	**13.48**	**2.904**

In terms of risk and solvency ratios, foreign Islamic banks are in a better position than their local counterparts in all ratios especially in D/E and EM. Foreign Islamic banks have shown improvement for all three risk and solvency ratios while the domestic Islamic banks have similar patterns for D/E and DR but not for EM.

Domestic Islamic banks have the average of 38.58% in D/E with the highest recorded in 2008 with 50.72% and the lowest in 2010 with 29.44%. Similarly, the foreign Islamic banks hit the worst D/E in 2008 with 44.35% and the best in 2010 at 18.32%.

DTAR in the Table 6.16 shows that foreign Islamic banks are slightly on top of the domestic Islamic banks with an average of 2.36% and 2.71% respectively.

Domestic Islamic banks are using debt to acquire their assets at the rate of an average of 15.25, more than 50% than the foreign Islamic banks at 10.53. Domestic Islamic banks have a lot to do to go on par with the foreign counterparts.

Table 6.17: Domestic vs. Foreign Islamic Banks Commitment to Economy and Muslim Community Ratios

	2008	2009	2010	2011	2012	Mean	Standard Deviation
Commitment to economy and Muslim community							
11. Long-term Loan Ratio (LTA)							
Domestic	39.18%	47.10%	54.86%	53.83%	50.97%	**49.19%**	**0.125**
Foreign	28.75%	25.47%	29.79%	35.40%	42.20%	**32.32%**	**0.115**
Overall	**35.27%**	**38.99%**	**45.46%**	**46.92%**	**47.68%**	**42.86%**	**0.121**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
12. Government Bond Investment (GBD)							
Domestic	20.80%	22.28%	17.26%	12.18%	14.32%	**17.37%**	**0.078**
Foreign	9.59%	8.33%	13.26%	8.20%	16.30%	**11.14%**	**0.075**
Overall	**16.60%**	**17.05%**	**15.76%**	**10.69%**	**15.06%**	**15.03%**	**0.077**

	2008	2009	2010	2011	2012	Mean	Standard Deviation
13. *Mudarabah - Musharakah* Ratio (MM/L)							
Domestic	0.10%	1.01%	1.77%	1.89%	2.31%	**1.41%**	**0.009**
Foreign	1.47%	1.82%	3.55%	5.19%	7.86%	**3.98%**	**0.027**
Overall	**0.61%**	**1.31%**	**2.44%**	**3.13%**	**4.39%**	**2.38%**	**0.016**

As can be seen in Table 6.17, domestic Islamic banks are more committed to helping the economy especially the Muslim community in the country with supporting more long-term projects and investing in Malaysian government bonds. However, they may need to increase their effort by involving more in *mudarabah* and *musharakah,* which are the essence of Islamic finance.

In LTA, foreign Islamic banks show an upward trend with the average of 32.32%. However, this is 16.87% below the numbers that the domestic Islamic banks involve in, that is 49.19%.

As for GBD, domestic Islamic banks have a decreasing pattern with the number of investment in government bonds with the highest in 2008 with 20.80% and the lowest was in 2011 with 12.18%. The foreign counterparts started lower than the domestic Islamic banks in 2008 with 9.59% but slowly increasing each year with the latest figure overtook the domestic Islamic banks with 16.30%

As for the final ratio, both domestic and foreign Islamic banks need to put extra effort in increasing the number of *mudarabah* and *musharakah* contracts in their accounts.

The domestic Islamic banks averaged 1.41% of its total loans were *mudarabah* and *musharakah* while the foreign Islamic banks have the average of 3.98%. Most common issues raised by the Islamic banks with regards to the equity financing especially *mudarabah* is that the contract is considered as high risk (equity risk). This is because capital provider (Islamic banks) may not have the legal capacity to involve in the day-to-day operation of the project and the bank may have to play active role in order to reduce informational asymmetries including financial disclosures, closer involvement with the project, transparency in reporting, and supervision during all phases of the project.

6.5   CONCLUSION

This chapter presented empirical results in relation to financial performance of Islamic banks in Malaysia using 13 financial ratios until the 2012 financial year end. A total of 16 Islamic banks consisting of 10 domestic Islamic banks and six foreign Islamic banks are included in the study. The first section described each banks' performance with a trend analysis. The second part of the chapter discussed the comparison between each banks' performances with regards to all financial ratio. The final section compared the performance of the foreign Islamic banks and domestic Islamic banks based on the four financial ratios.

The overall results indicate that the domestic Islamic banks are in a better position in terms of profitability, but the foreign counterparts surpassed the domestic Islamic banks in liquidity and risk and solvency ratios. As the analysis showed, there is little difference between the two in commitment to the economy and Muslim community ratios with the domestic Islamic banks slightly ahead of the foreign Islamic banks. However, the domestic Islamic banks can improve in their financial positon further to match the foreign Islamic banks in terms of providing *mudarabah* and *musharakah* financing.

When looking at the performance of individual banks, the top banks that stand out in profitability ratios are Public Islamic and AmIslamic. As a subsidiary of Public Bank, Public Islamic has the access to its parent company's huge client base of businesses and high-net worth individuals to tap into. This clientele are usually those who are

considered premium and sought after by any bank (large capital with low credit risk). Meanwhile, AmIslamic is the leader in retail financing especially in hire purchase (car financing). On the other hand, the worst performers include Al Rajhi, Asian Finance Bank, and BIMB. This is expected since Al Rajhi and Asian Finance suffered losses especially during their early years of operation.

For liquidity ratios, AmIslamic, Al Rajhi, and HSBC Amanah are among the top three in the category whereas BIMB and BMMB sit at the bottom of the table.

Asian Finance Bank, Al Rajhi, and HSBC Amanah are the least reliant on debt based on respective debt ratios calculated throughout 2008 to 2012. Conversely, Hong Leong Islamic Bank, Standard Chartered Saadiq, and OCBC Al-Amin depend heavily on debt in their operations. The foreign Islamic banks especially from the Middle East like Al Rajhi and Asian Finance Bank are usually equipped with abundance of cash reserves and are less likely to borrow money in order to develop.

For the commitment to the economy and Muslim community ratios, Public Islamic and Maybank Islamic are the most supportive in long-term financing projects, BIMB and BMMB invested more in government-linked investments as compared to the rest, and HSBC Amanah and KFH provided more *mudarabah* and *musharakah* related financing.

In reflecting on the findings, the result of the profitability ratios in the study are not consistent with the findings established by some of the previous studies including Bashir (2001) and Sabi (1996), which found that the foreign banks were more profitable than the domestic banks in the Middle East and Hungary respectively. Conversely, the result of the profitability ratios for Malaysian Islamic banks are in line with by Chen and Liao (2011) study which covered banks in countries like Croatia, Luxembourg, Hong Kong, and Thailand.

Islamic banks in Malaysia enjoyed the growth in demand for financing especially in property and business sectors during the period, but the domestic Islamic banks benefited the most due to its easier credit policy as compared to the foreign Islamic banks. Therefore, domestic Islamic banks like Maybank Islamic, CIMB Islamic, and

Public Islamic keep on producing record annual profits each year. The more vigilant foreign Islamic banks with regards to lending strategy, and coupled with their newer brands in the market made them less attractive to potential customers. This impacted their profitability but made them superior in risk and solvency as shown in the results of the said ratios above.

From the analyses, we have learnt that the foreign Islamic banks need to take slightly higher risk in order to compete with the domestic Islamic banks especially the dominant ones like Maybank Islamic, CIMB Islamic, and Public Islamic with regards to profitability. The management team of the foreign Islamic banks may want to relax its credit policy without jeopardising its risk and solvency approach. For example, if the current policy of foreign Islamic banks are focusing on top-rated customers only, perhaps moving forward the banks can accept a segment of better than average risk-classified type of customers. Even though it may require more supervision as compared to top-rated customers, this approach can increase its customer base hence, can improve their revenues.

The next chapter examines the efficiency of the Islamic banks by applying the Data Envelopment Analysis (DEA) and Malmquist Productivity Index. Similarly, the results are evaluated between the domestic and foreign Islamic banks in the country.

Chapter 7

EMPIRICAL RESULTS ON THE APPLICATION OF DEA AND MALMQUIST PRODUCTIVITY INDEX: DOMESTIC VS. FOREIGN ISLAMIC BANKS IN MALAYSIA

7.1. INTRODUCTION

This chapter examines the performance of domestic and foreign Islamic banks in Malaysia between 2008 until the 2012 financial year by employing Data Envelopment Analysis (DEA). As explained, the method is a nonparametric approach to the estimation of the production frontier, which is used to measure the efficiency of the decision making unit (DMU) for the Islamic banks in Malaysia (Cooper *et al.*, 2007). According to Wezel (2010), data on each bank's input and output selection is to be collected and then constructed to view a complete efficient production frontier of the banking system. The next step involves the calculation of an individual bank's efficiency score and to analyse the distance between each bank's positions from the efficient frontier. The chapter also examines the Malmquist Productivity Index and the changes in its components between the same subjects and timeframe.

7.2. DEA MODEL

DEA was originally introduced by Charnes, Cooper and Rhodes (CCR) in 1978. The authors proposed a model with input orientation and made an assumption on constant returns to scales (CRS) (Charnes, 1994). However, CRS is only applicable when all firms are running at an optimal level. A firm many not be at optimal scale due to imperfect competition or limitations in finance. Banker, Charnes and Cooper (BCC) improvised the CCR model that measures technical efficiency.

Banker *et al.* (1984) proposed the CCR model by diminishing the CRS assumption. As a result, the modified model of BBC aims to measure the firm's efficiency by looking at variable returns to scale (VRS). The newly formed model furnishes the measurement

of pure technical efficiency (PTE), derived from the exclusion of scale efficiency effects from the technical efficiency. If there are any discrepancies between TE and PTE scores, it implies that there is an element of scale inefficiency. Under the DEA model, the firm or organisation that is being studied is identified as DMU. The model assesses the performance of DMU with respect to the process of converting of multiple inputs into multiple outputs. In the estimation process, DEA allocates weights to the inputs and outputs of a DMU and determines the most probable efficiency. Simultaneously, DEA allocates the same weights to the other DMUs within the sample and compares the results against the focal DMU. If the focal DMU performs comparable with any other DMU, its efficiency score will be at a maximum. However, if there are other DMUs perform better, the focal DMU's efficiency score will be less than maximum. In general, it is utmost important to select the relevant input and output variables for a particular pool of DMUs to get the best result.

According to Bader *et al.* (2008), the relative efficiency can be measured as follow:

$$\frac{weighted\ sum\ of\ outputs}{weighted\ sum\ of\ inputs} \qquad (1)$$

This also can be written in following form:

$$\text{Efficiency of unit j} = \frac{u_1\ y_{ij} + u_2\ y_{2j} + \dots}{v_1\ x_{ij} + v_2\ x_{2j} + \dots} \qquad (2)$$

where:

u_1 = the weight given to output one.

y_{1j} = the amount of output one from unit j.

v_1 = the weight given to input one

x_{1j} = the amount of input one to unit j

The DEA models calculate the input and output weights by enhancing the means of the population. This is followed by DMUs being grouped into efficient and inefficient units according to the computation. For inefficient units, the results indicate the target values of inputs and outputs that would direct them to efficiency.

Furthermore, DEA models evaluate the DMUs that have various inputs to produce several outputs, which are expected to maximise the efficiency rate to determine the efficiency of the respective DMUs.

All of this is bound to the situation where the efficiency rate of any other units in the population must not be larger than one. The models must contain all the relevant characteristics considered including the weights of all inputs and outputs that should be greater than zero. Such type is defined as a linear divisive programming model, as follows:

$maximise \quad \dfrac{\Sigma_i u_i y_{iq}}{\Sigma_j v_j x_{jq}}$ (3)

$subject \ to \quad \dfrac{\Sigma_i u_i y_{ik}}{\Sigma_j v_j x_{jk}} \leq 1 \ k = 1, 2, ..., n$

$\qquad u_j \geq \in \ i = 1, 2, ..., s$

$\qquad v_j \leq \in \ j = 1, 2, ..., m$

The model depicted in equation 3 can be translated into linear programming model and transformed into a matrix:

$maximise \quad z = u^T Y_q$ (4)

$subject \quad v^T X_q = 1$

$\qquad u^T Y - v^T X \leq 0$

$\quad u \geq \in$

$\quad v \leq \in$

If implemented wisely, DEA proven be a powerful instrument. According to Charnes (1994, pp. 6-13), Hayes (2005, p. 56), and Cooper *et al.* (2007, p. 13), a few of the features that make DEA powerful are:

- DEA can handle multiple input and multiple output models.
- It does not require an assumption of a functional form relating inputs to outputs.
- DMUs are directly compared to a peer or combination of peers.
- Inputs and outputs can have different in units. For example, X1 could be in units of number of transactions, and X2 could be in units of RM without requiring a prior trade-off among the two variables.

It should also be mentioned that there are some shortcomings to the DEA methodology, the most relevant of which are summarised by Coelli *et al.* (2005, p. 6) and Márquez and Lev (2015, p. 57):

- High influence of estimated frontier by outliers and measurement errors;
- Biased results stemming from an exclusion of essential inputs or outputs, small number of observations produces large proportion of DMUs to be on the efficiency frontier;
- Inclusion of more DMUs into the estimation may decrease the average score as the efficiency is estimated to the best-practice DMUs, addition of extra input or output can only increase the technical efficiency score;
- Another bias can be caused by treating heterogeneous inputs or outputs as homogenous;
- DEA as an extreme point technique is sensitive to noise (even symmetrical noise with zero average) whereby such s measurement error can cause substantial problems.
- DEA is decent at estimating the 'relative' efficiency of a DMU, but it converges very gradually to 'absolute' efficiency. In short, DEA results will show a DMU performance against the peers but not against to a 'theoretical maximum'.
- As the standard formulation of DEA produces a separate linear program for each DMU, large problems can be computationally demanding.

7.3.   EMPIRICAL PROCESS: SELECTION OF INPUTS AND OUTPUTS

In general, the choice of the number of inputs and outputs for DMUs ascertains how good of a distinction exists between the efficient and inefficient units. There are two diverging considerations when estimating the size of the data set. One deliberation is to incorporate as many DMUs as possible. By including a high sample, there will be a greater chance that top performing firms will be included and form the efficient frontier that enhance the discriminatory power. Furthermore, a large data set may decrease the homogeneity of the population which means the external factors that unrelated to the models may give less impact to the results (Golany and Roll, 1989). Furthermore, the computational requirements will increase with larger data sets. Nevertheless, there are several rules of thumb for the number of inputs and outputs for selection and its connection to the number of DMUs.

Boussofiane *et al.* (1991) explained that in order to get decent discriminatory power out of the CCR and BCC models, the minimum number of DMUs should be derived from the multiplication of quantity of inputs against the quantity of outputs. In determining the efficiency of each DMU, the adaptability on the selection of weights for input and output values is very crucial. Therefore, a DMU may assign the entire weights to a particular input and output to be efficient based on a particular ratio of an output to an input. For instance, the minimum number of DMUs in a sample should be 12 if there are four inputs and three outputs (four multiply with three) to provide assured discriminatory power in the model.

As for Golany and Roll (1989), they proposed that the number of DMUs in the model should be a minimum of two times the quantity of inputs and outputs as a rule of thumb. For example, for a model that has four inputs and three outputs, there should be a minimum of 14 DMUs (based on the sum of four and three, and then multiply with two). Bowlin (1998) identified the requirement to have three times the number of DMUs based on the number of inputs and outputs. For example, for a model that has four inputs and three outputs, there should be a minimum of 21 DMUs (based on the sum of four and three, and then multiply with three).

Dyson *et al.* (2001) recommended the minimum number of DMUs should be at least twice of the multiplication of inputs and outputs. Using the same example, a model that has four inputs and three outputs should have a minimum of 24 DMUs (based on the multiplication of four and three, then multiply with two).

In sum, if there is a model with four inputs and three outputs, Boussofiane *et al.* (1991) proposed to use 12 DMUs, Golany and Roll (1989) suggested using 14 DMUs, Bowlin (1998) advised to incorporate 21 DMUs, and Dyson *et al.* (2001) recommend 24 DMUs. In general, the minimum number of DMUs based on these guidelines should be observed for any fundamental productivity model. These guidelines will ensure the discriminatory of the essential productivity models. Analysts may reduce the quantity of inputs or outputs if they find that the discriminatory power is non-existent because of the small number of DMUs. The analyst may resort to a different productivity model if the discriminatory power issue persist. Irrespective of the size of the data set, the DEA based productivity model should work effectively in distinguishing the DMUs (Sarkis, 2007).

In conducting an analysis of banking efficiency, either a production or intermediation approach can be opted for. In the 'production approach', the bank is considered as a firm that provides services, such as financing and remittances, through the use of capital and labour inputs. The output is commonly represented by the size of deposit accounts or transactions, and inputs are expressed as number of employees (labour) and capital expenditures on fixed assets (capital). In the 'intermediation approach', banks operate an intermediary function between lenders and depositors and hence accept deposits and other funds to provide financing and alternative investments. The output is measured by income or profit from financing, total deposits and any other non-interest bearing income while inputs are usually denoted by operating costs and costs of providing financing to customers. The latter is more acceptable approach in bank studies.

It should be noted that the 'production' approach is considered to be more suitable when analysing branch efficiency. Conversely, the intermediation approach is a more applicable reflection of banking activities when found at the bank level (Johnes *et al.*,

2014; Pasiouras, 2008). It should be noted that most of the previous studies also have fallen into the latter classification.

The choice of outputs selected from previous literature (Ayadi *et al.*, 1998; Bader *et al.*, 2008; Keskin and Degirmen, 2013; Matthews and Ismail, 2006; Sufian, 2007), were by data availability and the available data should not have negative values. Accordingly, the outputs chosen for this study are total financing (loans) and other earning assets. As for the inputs, they are defined as total deposits (deposits and short-term funding), personnel expenses and total equity. A similar set of inputs were used in previous studies (Beccalli *et al.*, 2006; Darrat *et al.*, 2003; Denizer *et al.*, 2000; Johnes *et al.*, 2009; Mokhtar *et al.*, 2008).

The majority of literature on DEA used total deposits as one of the inputs that represent the intermediation role of a bank that collecting deposits from its customers. Among studies that used total deposits as inputs were Mokhtar *et al.* (2008) and Johnes *et al.* (2009), who further elaborated that total deposits consist of deposits and short-term funding.

As for labour input, the researcher used personnel expenses as a proxy in this study, which as a variable is used in previous studies including Denizer *et al.* (2000) and Kamaruddin *et al.* (2008).

In the empirical modelling, total equity is included as an input to reflect risk-taking in the banking sector, which is rationalised on the grounds that Charnes (1994) proposed to integrate an indicator of risk-taking into every model of banking efficiency by the inclusion of loan-loss provision as an input. Therefore, equity is included as one of the inputs for this research as an alternative measure of risk. Furthermore, equity is considered to be better suited for the study of Islamic banks in Malaysia since most of the non-full-fledged Islamic banks share their assets with their conventional counterpart. Previous studies that include equity as part of their inputs can be found in Mostafa (2007) and Johnes *et al.* (2009).

In terms of data sources, it should be noted that all the variables are readily obtainable from Bankscope and analysed using DEAP version 2.1 software created by Coelli (1996). Thus, all 16 Islamic banks in Malaysia which in operation throughout the period of 2008 to 2012 are selected. The number of DMUs in this study is consistent with the recommendation based on the studies mentioned earlier.

In sum, for this study, total financing and other earning assets are chosen as outputs. As for inputs, total deposits, personnel expenses, and total equity are considered input variables in conducting the model.

7.4. MALMQUIST PRODUCTIVITY INDEX

Malmquist Total Factor Productivity (TFP) or simply Malmquist Productivity Index is a method that relies on the Data Envelopment Analysis (DEA), which evaluates the productivity change between two data points by calculating ratios of a particular value (increase/decrease rate) between two periods (Coelli *et al.*, 2005).

Ramesh *et al.* (2006) demonstrated the Malmquist Productivity Index by using distance functions. The Malmquist Productivity Index gauges the movement between two data points by computing the ratio of the distances of each data point comparative to a common technology.

The Malmquist (output-oriented) TFP change index between period t (the base period) and period *t+1* is given by equation 5;

$$M_0\left(x^{t+1}, u^{t+1}; x^t, u^t\right) = \left[\frac{D_0^t\left(x^{t+1}, u^{t+1}/CRTS\right)}{D_0^t\left(x^t, u^t/CRTS\right)} x \frac{D_0^{t+1}\left(x^{t+1}, u^{t+1}/CRTS\right)}{D_0^{t+1}\left(x^t, u^t/CRTS\right)}\right]^{\frac{1}{2}} \quad (5)$$

where the notation $D_0^s\left(u^t, x^t\right)$ represents the distance from the period *t* observation to the period S technology and CRTS stands for the constant rate to scale. In the estimation, a value of M_0 greater than one will indicate positive TFP growth from period *S* to period *t*. However, a value less than one indicates a TFP decline.

In order to assess the distance functions that are employed in the measurement of the Malmquist Productivity Index, constant returns to scale (CRS) hypothesis is applied

to technology (Keskin and Degirmen, 2013). The index evaluates the change in the TFP between two variables by computing comparative distance rate to the common technology of each variable, for which input and output based can be used in the distance functions (Deliktas, 2002). The input-based approach measures the minimum amount of inputs utilisation in a production of output (input minimisation). Conversely, output-based approach gauges the highest possible output production with constant inputs (output maximisation).

The Malmquist TFP Index is segregated into technical efficiency and technological change. The researcher can assess the efficiency change and technological change individually when the equation is separated into two.

$$\text{Efficiency change: } \frac{D_0^t\left(x^{t+1}, u^{t+1} / CRTS\right)}{D_0^t\left(x^t, u^t / CRTS\right)} \tag{6}$$

$$\text{Technical change: } \left[\frac{D_0^t\left(x^{t+1}, u^{t+1} / CRTS\right)}{D_0^{t+1}\left(x^{t+1}, u^{t+1} / CRTS\right)} \cdot \frac{D_0^t\left(x^t, u^t / CRTS\right)}{D_0^{t+1}\left(x^t, u^t / CRTS\right)}\right]^{\frac{1}{2}} \tag{7}$$

According to Ramesh *et al.* (2006), efficiency change (EC) measures the catching-up factor with the best practice frontier for each observation between two-time period t and $t+1$. In addition, the technical change (TC) measures the shift in the frontier of technology (innovation) between two successive periods evaluated at x^t and x^{t+1}. Efficiency and technical change indices exceeding unity indicate gains in those components.

Keskin and Degirmen (2013) further concluded that changes in the TFP index will show the differences between productivity changes, and technological and technical efficiency changes. An index value of being more than one implies that it increases during the shift from (t) period to ($i+1$) period; conversely, being less than one shows a decrease.

Change indices in TFP for the Islamic banks in Malaysia are computed as a whole and also independently for both domestic and foreign Islamic banks via applying panel data for the 2008 to 2012 period. Thus, the Malmquist TFP index presents temporal

development of banks' productivity and its sources. Again, DEAP version 2.1 software introduced by Coelli (1996) is employed for the measurement of indices.

7.5. EMPIRICAL RESULTS

In conducting the empirical analysis as described above and in Chapter 5, the data analysed and grouped into results of DEA and results of Malmquist Productivity Index. For each category, it further all Islamic banks, domestic Islamic banks and foreign Islamic banks with Malmquist Productivity Index. It also analysed for changes by year.

The results of the DEA are derived using CRS and VRS respectively based on a multi-stage method. Overall, technical efficiency is the measurement of output of the CRS efficiency. Conversely, by excluding scale inefficiencies, VRS is able to evaluate pure technical efficiency. The ratio of the estimated CRS to VRS efficiency produces the measurement of scale efficiency. Accordingly, an efficient firm should get an index score of one (100%).

As for the results of the Malmquist Productivity indices, besides the TFP, it also analyses technical efficiency and technological change. When the index value scores more than one, it represents the technological improvement and superior technical efficiency, and if it is less than one, it indicates deterioration. Furthermore, pure technical efficiency change and scale efficiency change are the elements uncovered from the partition of technical efficiency change. The technical efficiency change index can be observed when the pure technical efficiency change multiplies with scale efficiency change.

Pure technical efficiency measures the competency of management and identifies whether the firm operates and produces its outputs at a proper scale, while distortion of managerial competency causes a reduction in pure technical efficiency. On the other hand, firm's scale problem may influence the decline in scale efficiency.

As mentioned earlier, this study adopts the output orientation approach. However, for comparison, results for input orientation approach are also included in the estimated tables. In addition, scale efficiencies and returns to scale (RTS) results are incorporated, in which decreasing returns to scale means that output increases by less than that

proportional change in inputs while increasing returns to scale means output increases by more than that proportional change in inputs.

Table 7.1: Results of DEA – All Islamic Banks

Bank	CRSTE	VRSTE		SCALE		RTS
		Input oriented	Output oriented	Input oriented	Output oriented	
Affin Islamic	0.884	0.893	0.905	0.990	0.976	drs
Alliance Islamic	1.000	1.000	1.000	1.000	1.000	-
AmIslamic	0.977	0.985	0.985	0.992	0.991	drs
BIMB	0.667	0.745	0.827	0.895	0.806	drs
BMMB	0.875	0.911	0.915	0.960	0.956	drs
CIMB Islamic	1.000	1.000	1.000	1.000	1.000	-
Hong Leong Islamic	0.919	0.997	0.997	0.922	0.922	drs
Maybank Islamic	1.000	1.000	1.000	1.000	1.000	-
Public Islamic	0.950	0.965	0.963	0.985	0.987	irs
RHB Islamic	0.974	1.000	1.000	0.974	0.974	drs
Al Rajhi Bank	0.695	0.843	0.809	0.825	0.859	irs
Asian Finance Bank	0.207	1.000	1.000	0.207	0.207	irs
HSBC Amanah	0.843	0.854	0.870	0.987	0.969	drs
KFH	0.877	0.911	0.917	0.963	0.957	drs
OCBC Al-Amin	1.000	1.000	1.000	1.000	1.000	-
StanChart Saadiq	0.879	1.000	1.000	0.879	0.879	irs
Overall average	0.859	0.944	0.949	0.911	0.905	
Average domestic	0.925	0.950	0.959	0.972	0.961	
Average foreign	0.750	0.935	0.933	0.810	0.812	

Note: crste = technical efficiency from CRS DEA; vrste = technical efficiency from VRS DEA; scale = scale efficiency = crste/vrste

As depicted in Table 7.1, based on CRS, domestic Islamic banks outperformed the foreign Islamic banks with the average of 17.5%. Similarly, based on VRS, the domestic Islamic banks surpass the foreign counterpart but with a lower margin of 1.5% based on input orientation and 2.6% based on output orientation. As for scale efficiency, the results indicate that the domestic Islamic banks are more efficient than the foreign Islamic banks with the average score of 96.1% to 81.2% respectively.

In terms of individual banks, four banks are considered efficient under CRS, namely Alliance Islamic, CIMB Islamic, Maybank Islamic, and OCBC Al-Amin. Three most

inefficient banks based on CRS include Al Rajhi Bank, BIMB, and Asian Finance Bank with scores of 69.5%, 66.7% and 20.7% respectively. The result also shows that Al Rajhi Bank, BIMB, and Asian Finance Bank are the most inefficient banks in term of optimisation of their size of operations with the score of 85.9%, 80.6% and 20.7% respectively. With Al Rajhi and Asian Finance Bank as the new foreign Islamic banks in the bottom three, the scale inefficiency may be contributed from its ambitious estimations and projections when they started its operations and end up in over-hiring.

By factoring out the scale inefficiencies, seven banks are now considered efficient with the inclusion of the RHB Islamic, Asian Finance Bank, and Standard Chartered Saadiq together with the four Islamic banks mentioned earlier under CRS. Banks with the lowest scores under VRS are HSBC Amanah with 87%, BIMB with 82.7% and Al Rajhi Bank with the score of 80.9%.

Table 7.2: Results of DEA – Domestic Islamic banks

Bank	CRSTE	VRSTE		SCALE		
		Input oriented	Output oriented	Input oriented	Output oriented	RTS
Affin Islamic	0.987	1.000	1.000	0.987	0.987	irs
Alliance Islamic	1.000	1.000	1.000	1.000	1.000	-
AmIslamic	0.977	0.985	0.985	0.992	0.991	drs
BIMB	0.744	0.745	0.827	0.999	0.900	drs
BMMB	0.921	0.922	0.922	0.999	0.999	irs
CIMB Islamic	1.000	1.000	1.000	1.000	1.000	-
Hong Leong Islamic	1.000	1.000	1.000	1.000	1.000	-
Maybank Islamic	1.000	1.000	1.000	1.000	1.000	-
Public Islamic	0.950	1.000	1.000	0.950	0.950	irs
RHB Islamic	1.000	1.000	1.000	1.000	1.000	-
Average	**0.958**	**0.965**	**0.973**	**0.993**	**0.983**	

Table 7.2 indicates that seven out of 10 domestic Islamic banks are efficient based on VRS output orientation excluding AmIslamic, BIMB, and BMMB. However, according to CRS, only five banks are efficient, which are Alliance Islamic, CIMB Islamic, Hong Leong Islamic, Maybank Islamic, and RHB Islamic. The worst performer for both CRS and VRS measurement is BIMB with the score of 74.4% and 82.7% respectively.

Nevertheless, all domestic Islamic banks can be considered as scale efficient where the scores range from 90% to 100% for both input orientation and output orientation.

As for RTS, three banks are on increasing return to scale (IRS), which include Affin Islamic, BMMB, and Public Islamic, while AmIslamic and BIMB are on a decreasing return to scale (DRS).

Table 7.3: Results of DEA – Foreign Islamic Banks

Bank	CRSTE	VRSTE		SCALE		
		Input oriented	Output oriented	Input oriented	Output oriented	
Al Rajhi Bank	0.903	1.000	1.000	0.903	0.903	drs
Asian Finance Bank	0.222	1.000	1.000	0.222	0.222	irs
HSBC Amanah	0.967	1.000	1.000	0.967	0.967	drs
KFH	1.000	1.000	1.000	1.000	1.000	-
OCBC Al-Amin	1.000	1.000	1.000	1.000	1.000	-
StanChart Saadiq	1.000	1.000	1.000	1.000	1.000	-
Average	**0.849**	**1.000**	**1.000**	**0.849**	**0.849**	

As depicted in Table 7.3, all foreign Islamic banks are considered efficient among themselves based on VRS. However, 50% of the sampled banks are regarded as not technically efficient under CRS with Al Rajhi Bank, Asian Finance Bank, and HSBC Amanah.

The results for CRS and the scale efficiency for the three banks show similar scores with HSBC Amanah garner satisfactory score of 96.7%, Al Rajhi Bank with 90.3%, while the lowest among them is Asian Finance Bank with a sub-standard score of 22.2%.

Two banks are on DRS, namely Al Rajhi Bank and HSBC Amanah, which indicates that outputs of the banks increase less than the proportional change in its inputs. On the other hand, Asian Finance Bank is on IRS, which implies that the bank's outputs increase more than the proportional change in inputs.

Table 7.4: Results of Malmquist Productivity Index – All Banks

Bank	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
Affin Islamic	0.941	1.013	0.945	0.995	0.953
Alliance Islamic	0.988	0.981	1.000	0.988	0.969
AmIslamic	1.006	1.026	1.004	1.002	1.032
BIMB	1.107	1.020	1.049	1.055	1.129
BMMB	0.996	1.034	0.987	1.009	1.030
CIMB Islamic	1.000	1.002	1.000	1.000	1.002
Hong Leong Islamic	1.021	1.057	1.001	1.021	1.080
Maybank Islamic	1.000	0.866	1.000	1.000	0.866
Public Islamic	0.963	0.949	0.978	0.985	0.914
RHB Islamic	0.989	1.041	0.988	1.001	1.030
Al Rajhi Bank	1.021	0.992	1.012	1.009	1.014
Asian Finance Bank	1.395	1.023	1.000	1.395	1.427
HSBC Amanah	1.008	0.987	1.011	0.997	0.995
KFH	1.005	1.006	1.006	0.999	1.011
OCBC Al-Amin	1.000	0.936	1.000	1.000	0.936
StanChart Saadiq	0.957	0.922	1.000	0.957	0.882
Average	**1.021**	**0.990**	**0.999**	**1.022**	**1.010**
Average domestic	**1.001**	**0.999**	**0.995**	**1.006**	**1.001**
Average foreign	**1.064**	**0.978**	**1.005**	**1.060**	**1.044**

Note: All Malmquist index averages are geometric means.

Based on the results depicted in Table 7.4, the technical efficiency change index indicates that 43.8% or seven of the Islamic banks increased their average annual technical efficiency. As for banks in a declining state, 37.5% (six banks) of the sample are in this category. Meanwhile, the rest of the banks (three banks) denote no change between 2008 and 2012. The results show that among the banks that progress the most in technical efficiency are Asian Finance Bank (39.5%) and BIMB (10.7%). The results depict that most regressed banks are Affin Islamic with 5.9%, followed by Standard Chartered Saadiq (4.3%) and Public Islamic (3.7%). Three banks that have constant technical efficiency are CIMB Islamic, Maybank Islamic, and OCBC Al-Amin. As for grouped results, the average foreign Islamic banks' score outclassed the domestic Islamic banks with an increment of 6.4% to 0.1%.

As regards to technological change, as can be seen in Table 7.4, nine out of 16 banks (56.3%) improved their performance but the rest of them suffered deterioration. For this measurement, the domestic Islamic banks performed slightly better than the foreign Islamic banks with the score of 99.9% and 97.8% respectively. The most improved banks for technological change are RHB Islamic (4.1%) and BMMB (3.4%), while the banks registering the greatest decline are Maybank Islamic (13.4%), Standard Chartered Saadiq (7.8%) and OCBC Al-Amin 6.4%.

It should be noted that TFP change is considered the most important measurement of the outputs of Malmquist Productivity Index. For this measurement, as the results indicate, the foreign Islamic banks once again topped the domestic Islamic banks with the average score of 4.4% and 0.1% respectively. As can be seen, the best performing banks for this measurement are Asian Finance Bank (42.7%), BIMB (12.95), and Hong Leong Islamic with 8%. The results show that the worst performing banks includes Maybank Islamic (13.4%), Standard Chartered Saadiq (11.8%), and Public Islamic with a decline of 8.6%.

The results in Table 7.4 shows that AmIslamic, BIMB, Hong Leong Islamic, Asian Finance Bank, and Kuwait Finance House experienced growth across all measurements under the Malmquist Productivity Index. Meanwhile, Alliance Islamic, Public Islamic, and Standard Chartered Saadiq suffered regression in their performance. As shown, CIMB Islamic is the only bank that remains constant for all measurements.

Table 7.5: Results of Malmquist Productivity Index – All Banks by Year

Year	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
2009	1.016	0.935	0.999	1.017	0.950
2010	1.038	1.008	0.998	1.039	1.046
2011	1.026	0.944	0.999	1.027	0.968
2012	1.003	1.078	0.999	1.004	1.082
Average	**1.021**	**0.990**	**0.999**	**1.022**	**1.010**

According to Table 7.5, the average changes in term of technical efficiency for the whole population in the Malaysian Islamic banking industry is 2.1%. In checking the trajectory of development, it can be seen that the biggest jump took place in 2010 with 3.8% but in decreasing trend with the latest figure being 0.3%.

As for technological change, the overall trend shows an increasing pattern with a jump from -6.5% in 2009 to 7.8% in 2012. This change signifies the increment of outputs produced by the similar amount of inputs.

As can be seen in Table 7.5, average TFP change from 2008 to 2012 is 1% with yet another improving trend with the decrease in the productivity happened twice in 2009 and 2011 with -5% and -3.2% respectively. Meanwhile, 2010 and 2012 record a positive change in the score of 4.6% and 8.2% respectively.

Table 7.6: Results of Malmquist Productivity Index – Domestic Islamic Banks

Bank	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
Affin Islamic	0.916	1.051	0.971	0.943	0.963
Alliance Islamic	0.990	0.977	1.000	0.990	0.967
AmIslamic	1.006	1.026	1.004	1.002	1.033
BIMB	1.077	1.028	1.049	1.027	1.106
BMMB	0.983	1.057	0.994	0.989	1.040
CIMB Islamic	1.000	1.002	1.000	1.000	1.002
Hong Leong Islamic	1.000	1.107	1.000	1.000	1.107
Maybank Islamic	1.000	0.868	1.000	1.000	0.868
Public Islamic	0.963	0.949	0.969	0.994	0.914
RHB Islamic	0.987	1.049	0.988	0.999	1.036
Average	**0.992**	**1.009**	**0.997**	**0.994**	**1.001**

Table 7.6 shows the results of the Malmquist Productivity Index for domestic Islamic banks, which shows that among the domestic Islamic banks, the most improved bank in terms of technical efficiency is BIMB (+7.7%), and the greatest decliner would be Affin Islamic with a downward score of -8.4%.

This scenario can be further investigated by looking at the pure technical change and scale efficiency change scores through multiplication of the two scores translating into the technical efficiency change index. Thus, as can be seen in Table 7.6, the results show that Affin Islamic and Public Islamic faced managerial competency issues based on their respective pure technical change score of -2.9% and -3.1%. Affin Islamic's scale efficiency change of -5.7% indicate the suitability of the magnitude of the firm.

As can be seen in Table 7.6, the highest TFP change between the domestic Islamic banks earned by BIMB with 10.6% while Maybank Islamic regressed the most with -13.2%. Maybank Islamic's decline in TFP was contributed to by a decrease in technological change.

Table 7.7: Results of Malmquist Productivity Index – Domestic Islamic Banks by Year

Year	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
2009	0.959	0.994	1.002	0.957	0.953
2010	0.976	1.036	0.984	0.992	1.011
2011	1.035	0.933	0.990	1.046	0.966
2012	0.998	1.080	1.015	0.983	1.078
Average	**0.992**	**1.009**	**0.997**	**0.994**	**1.001**

Table 7.7 illustrates the results of the Malmquist Productivity Index for domestic Islamic banks by year. The average technical efficiency change among the domestic Islamic banks was in a declining state with the score of -0.2%. Nevertheless, the domestic Islamic banks managed to get a positive change 2011 with 3.5%.

As for technological change, the average difference is 0.9% with the highest change registering in 2012 with 8%, while the worst decline occurred one year before that with the score of -6.7%.

As can be seen from Table 7.7, average TFP change for the domestic Islamic banks from 2008 to 2012 is 0.1% with the best performance taking place in 2012 with the change of 7.8% and the worst downfall recorded in 2009 with -4.7%. The negative figure indicates that on average, in 2009, the domestic Islamic banks are less efficient in utilising the inputs in their production (producing outputs) as compared to the previous year.

Table 7.8: Results of Malmquist Productivity Index – Foreign Islamic Banks

Bank	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
Al Rajhi Bank	0.990	1.003	0.979	1.012	0.993
Asian Finance Bank	1.395	1.025	1.000	1.395	1.429
HSBC Amanah	1.008	1.006	1.000	1.008	1.015
KFH	1.000	1.006	1.000	1.000	1.006
OCBC Al-Amin	1.000	0.853	1.000	1.000	0.853
StanChart Saadiq	1.000	0.719	1.000	1.000	0.719
Average	**1.057**	**0.928**	**0.996**	**1.061**	**0.980**

Table 7.8 shows that the highest growth bank in terms of technical efficiency among the foreign Islamic banks is the Asian Finance Bank with a change of 39.5%. This change indicates that the bank is improving the effectiveness of producing maximum outputs with a given inputs. Three banks remain at the same level throughout the years that is KFH, OCBC Al-Amin, and Standard Chartered Saadiq, while Al Rajhi's Malmquist Productivity Index deteriorated by one percent.

The result in Table 7.8 also indicates that 66.7% of the foreign Islamic banks have improved their technology, while OCBC Al-Amin and Standard Chartered Saadiq's technological change index showcased their decline in technology during the period with a rate of -14.7% and -28.1% respectively.

It has also been observed that five out of six foreign Islamic banks have a constant pure technical efficiency, as the observation suggests that there is no change in managerial competency with Al Rajhi bank, which display a slight reduction of -2.1% for the same measurement. As for scale technology, 50% of the foreign Islamic banks show progress in performance (Al Rajhi, Asian Finance Bank, and HSBC Amanah), whereas the other 50% indicate no change (KFH, OCBC Al-Amin, and Standard Chartered Saadiq).

As can be seen in Table 7.8, Al Rajhi, OCBC Al-Amin and Standard Chartered have a declining TFP. It should be noted that Al Rajhi's drop was caused by managerial incompetence while the other two Islamic banks deteriorated due to a decrease in technological change.

Table 7.9: Results of Malmquist Productivity Index – Foreign Islamic Banks by Year

Year	Technical Efficiency Change	Technological Change	Pure Technical Change	Scale Efficiency Change	Total Factor Productivity (TFP) Change
2009	1.175	0.690	1.000	1.175	0.811
2010	1.030	1.001	1.000	1.030	1.030
2011	1.004	0.966	0.992	1.012	0.970
2012	1.027	1.111	0.993	1.034	1.141
Average	**1.057**	**0.928**	**0.996**	**1.061**	**0.980**

As can be seen in Table 7.9, there were improvements in an annual average of technical efficiency for foreign Islamic banks from the year 2008 to 2012. The average technical efficiency change for the said period is 5.7%. A similar case can be observed in scale efficiency change with every year indicating improvements with an average of 6.1% throughout the same period. As for pure technical change, between 2008 and 2010, the managerial competency was maintained at the same level, which was continuously dropped for the next two years at a rate of -0.8% and -0.7% respectively.

As can be seen in Table 7.9, technological change plays a vital role in determining the TFP for these banks whereby a change in technological change indicates a direct relationship with TFP. Between 2008 -2009, the indicators show a decline of -31% for technological change and -18.9% for TFP. The indicators display a growth in the following year but decline again in the year after. However, in 2012, both indicators record a growth of 11.1% and 14.1% respectively.

7.6. CONCLUSION

By way of conclusion, DEA results based on CRS suggests that the size of a bank is not relevant when assessing efficiency where only four Islamic banks considered as efficient. However, the CRS entirely ignores the scale operations and will possibly lead to impractical benchmarks. Therefore, the VRS model is more acceptable which is consistent with previous studies conducted by Mostafa (2007), Mokhtar *et al.* (2008), and Johnes *et al.* (2009). By looking at the VRS model, RHB Islamic, Asian Finance Bank, and Standard Chartered Saadiq make the list of technical efficient banks. Furthermore, as can be seen from Tables 7.1 to 7.3 there is little difference in the results between input orientation and output orientation. The ranking of the banks remains the same regardless of orientation.

Table 7.10: Summary of Results of DEA

Group	Efficient Banks
Domestic Banks	Alliance Islamic, CIMB Islamic, Hong Leong Islamic, Maybank Islamic and RHB Islamic
Foreign Banks	KFH, OCBC Al-Amin and Standard Chartered Saadiq
Overall	Alliance Islamic, CIMB Islamic, Maybank Islamic and OCBC Al-Amin

According to Table 7.10, it can be concluded that among the domestic Islamic banks, five banks are considered efficient for the covered period corresponding with respective DEA scores (CRSTE, VRSTE and scale efficiency). The banks are Alliance Islamic, CIMB Islamic, Hong Leong Islamic, Maybank Islamic, and RHB Islamic. As for foreign Islamic banks, KFH, OCBC Al-Amin and Standard Chartered Saadiq are considered efficient.

When looking at the overall performance and taking into consideration the competition factors between local and foreign Islamic banks, only four banks make the list. The best performing banks are Alliance Islamic, CIMB Islamic, Maybank Islamic, and OCBC Al-Amin. This result implies best all-around performance for technical efficiency and scale efficiency.

Table 7.11: Summary of Results of Malmquist Productivity Index

Group	Technical Efficiency Change		Technological Change		Total Factor Productivity (TFP) Change	
	Most progressed	Most regressed	Most progressed	Most regressed	Most progressed	Most regressed
Domestic Banks	BIMB	Affin Islamic	Hong Leong Islamic	Maybank Islamic	Hong Leong Islamic	Maybank Islamic
	7.7%	(8.4%)	10.7%	(13.2%)	10.7%	(13.2%)
Foreign Banks	Asian Finance	Al Rajhi	Asian Finance	StanChart Saadiq	Asian Finance	StanChart Saadiq
	39.5%	(1.0%)	2.5%	(28.1%)	42.9%	(28.1%)
Overall	Asian Finance	Affin Islamic	Hong Leong Islamic	Maybank Islamic	Asian Finance	Maybank Islamic
	39.5%	(5.9%)	5.7%	(13.4%)	42.7%	(13.4%)

As for the Malmquist Productivity Index, the summary results in Table 7.11 shows that BIMB and Asian Finance Bank had a growth pattern with regards to technical efficiency. However, they need to improve further if they want to match their performance with the like of Alliance Islamic, CIMB Islamic, Maybank Islamic, and OCBC Al-Amin, which show a supreme performance based on DEA results.

However, Hong Leong Islamic and Asian Finance have improved their technology throughout 2008 to 2012 while Maybank Islamic and Standard Chartered Saadiq demonstrated adverse development in their productivity index.

As for TFP change, it indicates that Hong Leong Islamic and Asian Finance Bank again demonstrated increment for the category of domestic, foreign and overall. However, Standard Chartered Saadiq was in a declining trend among the foreign Islamic banks and Maybank Islamic is the most regressed bank among the domestic Islamic banks. As the findings show, Maybank Islamic also suffers the worst decline in the whole population of Islamic banks in Malaysia in the period covered. Even though Maybank is one of the best performers according to DEA results, their results in the Malmquist Productivity Index may give them a warning sign to improve further in the wake of competition coming from other domestic and foreign Islamic banks.

In reflecting upon the results, the DEA results confirm that the domestic Islamic banks were more efficient as compared to the foreign Islamic banks in the country. The findings are incompatible with results from Bonin *et al.* (2005), Keskin and Degirmen (2013), and Parinduri and Riyanto (2014), whereby the outcome of the DEA of this study implies that the domestic Islamic banks in Malaysia utilised the home field advantage to their gains. The newcomers to the market such as Al Rajhi, Kuwait Finance House, and Asian Finance Bank might have advantage in terms of liquidity, but they were less cost-efficient as compared to the domestic counterparts. On top of that, the domestic Islamic banks perhaps possess better know-how and higher-quality employees unlike the foreign Islamic banks. This situation is similar to the studies by Liao (2009) and Ong *et al.* (2011) for conventional banks in Taiwan and Malaysia respectively.

Despite the fact that the foreign Islamic banks are less profitable and less efficient between 2008 and 2012, the establishment of subsidiary of existing conventional banks in the country, and decision to grant new licenses to foreign entities prior to that have resulted the improvement in overall efficiency of the industry. According to Sufian (2007), the Malmquist TFP of Malaysian Islamic banking industry were in decline state between 2001 and 2004. However, based on the recent findings from this study, it shows that the Malmquist TFP were on the rise between 2008 and 2012. One of the main indicators in Malmquist Productivity Index *i.e.* technological change was the most dominant factor in contributing to the growth. The rapid improvement in technology implementation among the banks in the country together with the liberalisation exercise led by BNM proved to be effective in promoting competition and improve the performance of the Islamic banks in Malaysia. The result is consistent with study by Pawlowska (2005), which analysed the Polish banking industry for the period of 1997 to 2012. The lessons learned from this also indicates that the foreign Islamic banks with lower scale efficiency such as Al Rajhi, Asian Finance Bank, and Standard Chartered Saadiq should hire lesser staff, and focus more on employing higher quality staff without relying on quantity. A bank can be technically inefficient if hiring too many employees to produce maximum outputs as compared to its competitors. The next chapter analyses the nature of competition in the Malaysian Islamic banking industry.

Chapter 8

COMPETITION AND MARKET STRUCTURE OF THE MALAYSIAN ISLAMIC BANKING INDUSTRY: EMPIRICAL RESULTS

8.1   INTRODUCTION

This chapter investigates the impact of competition in the Malaysian Islamic banking industry by focusing on the particular impact created by the entrance of full-fledged foreign Islamic banks plus the introduction of Islamic subsidiaries of existing conventional banks in the country (domestic and foreign ownership). The chapter also measures the market structure of the industry by looking at k-bank concentration ratio (CR_k), Herfindahl-Hirschman Index (HHI), and the Panzar-Rosse (PR) Model.

A panel data consisting of all Islamic banks in the country (16 banks) that operated throughout 2008 to 2012 are included and analysed according to the methods mentioned above using Microsoft Excel 2013 and EViews version 8. A comparison of results from the whole population of Islamic banks in Malaysia and domestic Islamic banks may suggest the impact made by the foreign Islamic banks in the industry.

8.2   COMPETITION MODELS AND THEIR COMPUTATIONS

Competition in the banking industry and its efficiency are major factors that have an impact on performance and financial stability of banks. As mentioned above, this study employs three methods of determining the competition and market structure of Islamic banking industry in Malaysia. The methods are k-bank concentration ratio, Herfindahl-Hirschman Index (HHI,) and H-statistic from PR model that can be seen in Rosse and Panzar (1977) and Panzar and Rosse (1987). These methods are widely used for analysing competitive structure of the banking industry.

8.2.1 *K*-Bank Concentration Ratio (CR*k*) and Its Estimations

The significance of concentration ratio resulted from the ratio's ability to capture structural characteristics of a market. As a consequence, the competitive performance of banks are always measured using structural models especially concentration ratios (Bikker and Haaf, 2002). The concentration ratios are also very useful in determining changes due to the entry of competition of foreign banks or from merger and acquisition activities (Bikker and Haaf, 2002).

In theory, measurement of concentration ratio is based on total output production by a certain number of firms in the same industry. Concentration ratios usually measure the market share of top four or top eight of the largest companies that denote as CR_4 and CR_8 respectively. The ratios are very useful in determining the degree of the market structure based on the market control of the biggest firms in the industry (Al-Muharrami *et al.*, 2006; Bikker and Bos, 2008; Bikker and Spierdijk, 2009).

In terms of measurement, as can be seen from equation (1), the market share of industry size accounted for by *k* largest firms are the typical form of concentration measurement:

$$CR_k = \sum_{i=1}^{k} s_I \qquad\qquad (1)$$

CR_k = *k* firm concentration ratio.

S_i = percentage market share of the *i*th firm.

In general, concentration ratios of largest four or five are used. It is widely used due to of its simplicity, being easy to comprehend and being suitable for those who have limited data requirements. However, this method has a few disadvantages. First, the inspiration of the conventional concentration ratio is not centred on theory. Second, the ratio focus on market share alone may highlight the disparity between the top *k* firms with the rest of the companies in the industry or when comparing with a different market. For example, there are two markets that possess similar concentration ratios as identified by the respective shares held by *k* largest companies.

However, even if the ratios are the same, higher competition is more likely to exist in the market with more firms between the two. Secondly, the characteristics of companies are not included in the model which may lead to certain concerns. For instance, there is the possibility of a same concentration ratio of the big-four firm even when four different firms switch the four largest companies in the ratio. This scenario may be perceived as an unchanged market concentration. Lastly, the selection of a certain value of k is indiscriminate and has small direct economic significance. Thus, comparison of concentration in an industry at two points in time depends on the arbitrarily chosen value of k. This issue led this research to rely more on a generalised measure of concentration, which relates to a generalised test transforming the information on the number and size distribution of firms presented by concentration curve into a single value (Al-Muharrami *et al.*, 2006; Bikker and Haaf, 2002; Pawlowska, 2005).

As for the interpretation of the CR_k scores, the summary of the potential results is presented in Table 8.1:

Table 8.1: Interpretation of CR$_k$ Scores

Score	Level of concentration	Market structure
0%	No concentration	Perfect competition
1% - 50%	Low concentration	Monopolistic competition
51% - 80%	Medium concentration	Monopolistic competition / oligopoly
81% - 100%	High concentration	Oligopoly / monopoly

Source: Shepherd and Shepherd (2003)

As to the computation of the CR_k scores, data that included in the computation of CR_k for this study are total deposits, short-term funding, and total financing. In order to find the respective CR_k, the first step is to calculate the total values for both deposits and financing, which is followed by calculating the total values of deposits and financing for the leading two and four in the market. Dividing the values of the top two and top four for respective variables against the total values in the population and multiply the result with 100.

There are two sets of results produced by CR_k scores: one that consist of all banks and the other based on domestic Islamic banks only, as this research aims to see the

significance of foreign Islamic banks with regards to the market structure of the Islamic banking industry in Malaysia.

8.2.2 Herfindahl-Hirschman Index (HHI)

According to Cetorelli (1999), another standard measure of concentration, which is often employed by regulators, is the Herfindahl-Hirschman Index (HHI). The measurement is defined as the sum of the squared market shares of all banks in the market. Based on the current screening guidelines, if the post-merger market HHI is lower than 1,800 points, and the increase in the index from the pre-merger situation is less than 200 points, the merger is presumed to have no anticompetitive effects and is approved by the regulators. Should those limit values exceed the guidelines, the regulators will check for the existence of potential mitigating factors that would make it unlikely that the merger could result in anticompetitive behaviour (Cetorelli, 1999).

The HHI can be calculated by adding up the squares of the market shares of all firms in the market as in equation 2:

$$HHI = \sum_{i=1}^{n} s_i^2 \qquad (2)$$

where:

HHI= Herfindahl-Hirschman Index

$S_{i=}$ the percentage market share of the ith firm.

Named after economists Herfindahl and Hirschman, HHI is an economic concept widely applied in competition law, antitrust and also technology management besides the banking industry (Al-Muharrami, 2009). The HHI emphasises the importance of larger banks by assigning them a greater weight than smaller banks, which incorporates each bank individually so that arbitrary cut-offs and insensitivity to the share distribution are avoided (Al-Muharrami, 2009). Bikker and Haaf (2002) informed that the primary benefit of the HHI in relationship to such measures as the concentration ratio is that it gives more weight to larger firms.

The result of HHI is proportional to the average market share as weighted by market share. Therefore, it can range from 0 to 1.0, moving from an enormous number of tiny firms to a single monopolistic producer. An increment in the HHI indicates a decline in competition and an increase of market power, whereas a drop indicates the opposite. Alternatively, if the whole percentages are used, the index ranges from 0 to 10,000 points. For example, an index of .25 is the same as 2,500 points (Al-Muharrami *et al.*, 2006 and (Cetorelli, 1999). Additionally, Shepherd and Shepherd (2003) explained that the market is loose oligopoly if the HHI is below 1,000. Conversely, the market is considered tight oligopoly if the HHI is above 1,800. Table 8.2 summarises the interpretation of HHI scores.

Table 8.2: Interpretation of HHI Scores

Score	Market structure
HHI below 0.01 or 100	Highly competitive market
HHI below 0.1 o 1,000	Unconcentrated market
HHI between 0.1 to 0.18 or 1,000 to 1,800	Moderate market concentration
HHI above 0.18 or above 1,800	High market concentration

Source: Bikker and Haaf (2002) and Cetorelli (1999)

As for the computation of HHI, the researcher uses the market share of total deposits of every Islamic bank in Malaysia. With the aim of getting a respective market share, one bank's total deposits and short-term funding is divided by the total deposits and short-term funding of the whole population. In addition, respective market share calculated earlier, then multiply with itself (square) and finally all banks' squares will be added up to get the HHI.

Once again, for the sake of comparison, the researcher prepares two sets of results that the first set consist of all banks and the other contain the domestic Islamic banks only. Together with the results of CR_k, the author will find the respective *p*-value to determine any difference caused by the participation of foreign Islamic banks in Malaysia and determine the significance of the change.

8.2.3 Panzar-Rosse (PR) Model

The Panzar-Rosse approach is frequently applied to empirically assess the competitive situation in the banking market. The method was developed by Panzar and Rosse (1977) for determining the competitive behaviour of banks. It analyses the bank's total revenue, as it responds to changing input prices based on cross-section data (Abdul Majid and Sufian, 2007; Al-Karasneh and Fatheldin, 2005; Al-Muharrami, 2009).

According to Bikker and Haaf (2002), this approach consists of an estimation of the degraded form revenue equations ($R*$) of the market participants, which is derived from marginal revenue and cost functions and the zero profit constraint in equilibrium. It is expressed as in equation 3:

$$R*(z,t,w) \tag{3}$$

where: z = exogenous variables shifting the firm's revenue function; t = exogenous variables shifting the firm's cost function; w = factor prices.

In equilibrium, the marginal costs (MC_i) are equal to the marginal revenues (MR_i) as a result of banks' individual profit maximisation as expressed in equation (4):

$$MC_i\left(y_i, w_{i,j}, t_i\right) = MR_i\left(y_i, n, z_i\right) \tag{4}$$

where: y_i = bank's output; n = number of banks in the market; zero profits earned in market equilibrium $= R_i^*\left(y^*, n^*, z\right) - C_i^*\left(y^*, w, t\right) = 0$.

Casu and Girardone (2006) denoted that the test should be called H-statistics, as it is computed from a reduced-form revenue equations and measures the sum of elasticity of total revenue of the firm with respect to the firm's input prices that can be written as in equation (5):

$$H = \sum_{j=1}^{m}\left(\frac{\partial R*}{\partial w_j} \times \frac{w_j}{R*}\right) \tag{5}$$

Therefore, the *H*-statistic is a measure of competition, which corresponds to the sum of the elasticity of the reduced form income with respect to factor prices ($\beta_1 + \beta_2 + \beta_3$). Depending on the magnitude of *H*-statistic, it can be deduced whether the banking market is operating under monopolistic competition, perfect competition or monopoly.

Panzar and Rosse (1987) concluded that in market equilibrium, perfect competition is indicated by *H* equal to one. Under perfect competition, an increase in input prices and thus increase in average costs should lead to a proportional price increase and (at the firm level) to a proportional rise in revenues. However, under monopoly condition, an increase in input prices will increase marginal costs, reduce equilibrium output and consequently reduce total revenues and the *H*-statistic is negative or equal to zero. Whereas, if the market structure is characterised by monopolistic competition, the *H*-statistic will lie between zero and one (Pawlowska, 2005).

According to Casu and Girardone (2006), the PR *H*-statistic interpretation can be summarised as follows: *H* is equal to zero or negative when the competitive structure is a monopoly or a perfectly colluding oligopoly. However, when *H* is equal to one, it indicates perfect competition and 0<H<1 indicates the monopolistic competition.

Pawlowska (2005) indicated that the critical feature of the *H*-statistic is that the tests must be undertaken on observations that are in a long-run equilibrium. In order to test for an equilibrium, one can calculate the PR *H*-statistic using the return on assets (ROA) as the dependent variable in place of the total revenue function in the regression equation. On the other hand, a value of H<0 would show non-equilibrium whereas *H*=0 would indicate an equilibrium, which is supported by Al-Muharrami (2009) and Abdul Majid and Sufian (2007).

Table 8.3 summarises the interpretation of competitive environment test and the equilibrium test of PR *H*-statistic.

Table 8.3: Interpretation of Panzar-Rosse *H*-Statistic

Values of H	Competitive Environment Test
$H \leq 0$	Monopoly or perfectly collusive oligopoly
$0 < H < 1$	Monopolistic competition
$H = 1$	Perfect competition or natural competition
Values of H	**Equilibrium Test**
$H < 0$	Disequilibrium
$H = 0$	Equilibrium

Source: Casu and Girardone (2006), Molyneux *et al.* (1994) and Panzar and Rosse (1987).

Similar to DEA, the author will assume that banks operate as an intermediation unit that produces intermediation services using labour, physical capital and financial capital (funds) as inputs. By calculating the *H*-statistic, this will give better understanding in how revenues react to variations in the inputs. Following Claessens and Laeven (2004), Pawlowska (2005), Abdul Majid and Sufian (2007) and Al-Muharrami (2009), estimating the *H*-statistic for this study is based on the reduced-form revenue equation that has been estimated using factor prices and bank-specific variables can be found in equation 6 as follows:

$$\ln(TREV) = \alpha + (\beta_1 \ln(PL) + \beta_2 \ln(PK) + \beta_3 \ln(PF)) + \\ + \gamma_1 \ln(TA) + \gamma_2 \ln(ETA) + \gamma_3 \ln(FTA) + \varepsilon \tag{6}$$

where:

TREV : ratio of total revenue to total assets (proxy of output price of financings);
PL: ratio of personnel expenses to total assets (proxy of input price of labour);
PK: ratio of other operating expenses to total assets (proxy of input price of capital);
PF: ratio of income attributable to depositors to total deposits (proxy of input of deposits);
TA: total assets (bank size or proxy of economies of scale);
ETA: ratio of total equity to total assets (proxy of capital structure);
FTA: ratio of total financings to total assets (proxy of degree of communication).

The justification for employing log-linear form relates to typically improving the regression's goodness of fit and may reduce simultaneity bias (Al-Muharrami, 2009; Molyneux *et al.*, 1994).

Another important element for *H*-statistic is that PR model is only valid if the market is in long-run equilibrium (Abdul Majid and Sufian, 2007; Molyneux *et al.*, 1994). It can be estimated as in equation 7:

$$\ln(ROA + 1) = \alpha + (\beta_1 \ln(PL) + \beta_2 \ln(PK) + \beta_3 \ln(PF)) +$$
$$+ \gamma_1 \ln(TA) + \gamma_2 \ln(ETA) + \gamma_3 \ln(FTA) + \varepsilon \tag{7}$$

where:

ROA – the ratio of earnings after tax to total assets.

Since the return on assets can generate a small or even negative values due to banks' losses, the computation of the dependent variable of *ROA'*=ln(ROA+1) where *ROA the* is the unadjusted return on assets. The definition of long-run equilibrium *H*-statistic is $\beta_1 + \beta_2 + \beta_3$=0. If rejected, and consequently the market is assumed as not in equilibrium (Claessens and Laeven, 2004).

8.3   EMPIRICAL RESULTS

The results of CR_k of deposits and financing for this study are calculated based on the top two and top four Islamic banks in Malaysia (CR_2 and CR_4 respectively). Accordingly, the CR_2 and CR_4 results are calculated based on total population of Islamic banks in the country and based on domestic Islamic banks to determine the impact of foreign Islamic banks on the industry.

On the other hand, the HHI focused on deposits alone and computed for all banks and among domestic Islamic banks, which is similar to CR_k. Additionally, one column of assets penetration is included in the same table, which shows the level of penetration of foreign Islamic banks' market share in terms of total assets to overall total assets of the entire population of Islamic banks in Malaysia.

As for the study of the PR model, it employs a panel regression methodology that combines the cross-section and time series data (panel data). The selected dependent and independent variables were analysed using EViews version 8. The model also uses the fixed effects estimators in order to correct for the effect of any combination of time-

variant variables that have been omitted, knowingly or not from the regression model as applied by Abdul Majid and Sufian (2007) and Al-Muharrami (2009). Furthermore, variance inflation factor (VIF) and Wald test are conducted to check multicollinearity issues and testing of the hypothesis of equilibrium respectively.

Table 8.4: Data Summary Statistics – All Banks

Year	Trends in concentration in deposits			Trends in concentration in financing		Penetration (assets)
	CR_2	CR_4	HHI	CR_2	CR_4	
2008	0.30	0.53	0.10	0.36	0.55	0.18
2009	0.29	0.55	0.10	0.36	0.57	0.17
2010	0.33	0.57	0.10	0.39	0.59	0.14
2011	0.39	0.59	0.12	0.43	0.62	0.14
2012	0.40	0.59	0.12	0.42	0.59	0.12
Mean	**0.34**	**0.56**	**0.11**	**0.39**	**0.58**	**0.15**
Std dev	**0.04**	**0.02**	**0.01**	**0.03**	**0.02**	**0.02**

Table 8.4 presents the trends of CR_k, HHI and foreign Islamic banks' assets penetration for all Islamic banks in Malaysia from 2008 to 2012. In general, the trends for CRk and HHI are on a decline, which is consistent with the assets penetration of foreign Islamic banks in the country for the same duration. The trends in concentration in deposits and financing show similar results with the average of 34% and 39% respectively for CR_2 and 56% and 58% respectively for CR_4. This situation implies that for CR_2, the Malaysian Islamic bank market can be described as monopolistic competition with low concentration. If calculation based on top four banks in terms of deposits and financing, the market can be explained as a monopolistic competition as well but with a medium concentration.

As for HHI, the score keeps on increasing year after year with the index of 0.10 for the first three years and increase to 0.12 in 2011 and 2012. This scenario indicates a moderate market concentration that may be due to the decrease in foreign Islamic banks' assets penetration. As can be seen, the foreign Islamic banks' asset penetration in 2008 was at 18% and reduced every year with the latest score of 12% in 2012. The decline suggests that the foreign Islamic banks in Malaysia were losing their grip against the top four banks in deposits and financing markets. The top banks in the period

were dominated by domestic Islamic banks *i.e.* Maybank Islamic, CIMB Islamic, Public Islamic, and BIMB.

Table 8.5: Data Summary Statistics – Domestic Islamic Banks Only

Year	Trends in concentration in deposits			Trends in concentration in financing	
	CR_2	CR_4	HHI	CR_2	CR_4
2008	0.37	0.64	0.13	0.43	0.66
2009	0.34	0.66	0.13	0.43	0.68
2010	0.38	0.66	0.13	0.46	0.69
2011	0.44	0.67	0.15	0.50	0.71
2012	0.46	0.67	0.16	0.47	0.67
Mean	0.40	0.66	0.14	0.46	0.68
Std dev	0.04	0.01	0.01	0.02	0.02
***p*-value**	0.032**	0.000***	0.001***	0.003***	0.000***

Note: ***, ** and * indicate the differences are significance at 1%, 5% and 10% respectively.

Additionally, all concentration ratios and HHI are computed for the subsample of domestic Islamic banks only. This will test the robustness of the findings on the impact of the entrance of foreign Islamic banks in Malaysia. According to Table 8.5, by factoring out the foreign Islamic banks in the mix, it can be noted that the CR_k and HHI scores indicate the same market structures as the index for the whole population. However, the indices are now moving towards the borderline of the next rating for each category. For example, for the average score of CR_2 in financing was 46% in the sample of domestic Islamic banks only as compared to 39% with the inclusion of foreign Islamic banks. A lower score indicates less market concentration and more competition between the Islamic banks. This scenario can be seen across all indices, pointing towards reduced market concentration and further competition among the Islamic banks in the country. This development implies that the presence of foreign Islamic banks in the country gives some competition to the domestic Islamic banks.

The different scores between the indices for all banks and subsample of domestic Islamic banks are significant in all concentration ratios and HHI based on each *p*-values at 1% significance level except for CR_2 of deposits, which is significant at the 5% significance level. It can be concluded that foreign Islamic banks may have an impact on the market structure of the Malaysian Islamic banking industry. The effort made by

BNM to liberalise the financial sector seemed to contribute to the competitive environment through the merger between the domestic Islamic banks and allowing new foreign players in the industry during late 1990s and early 2000s respectively, to encourage more innovation and competition. BNM's plan proved to be successful in making the financial system more resilient, competitive, and dynamic.

Table 8.6: Regression Results

	lnTREV		ln(1+ROA)	
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Intercept	0.0394	0.0601	-0.0397	-0.7658
ln PL	0.1449	5.2769***	0.0029	1.3452
ln PK	0.2196	4.8406***	-0.0030	-0.8228
ln PF	0.5721	11.1413***	0.0005	0.1136
ln TA	0.1473	1.9199*	0.0088	1.4451
ln ETA	0.1394	2.4050**	0.0107	2.3404**
ln FTA	0.2033	3.1323***	0.0067	1.3052
Adjusted R^2	0.9615		0.4531	
H-statistic	0.9366		0.0000	
Wald test (H=0)			3.6185***	
Test result	Monopolistic competition		Equilibrium	
VIF	<10		<10	
Number of observation	80		80	

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

In the regression results in Table 8.6, the TREV equation indicates the coefficients of the unit price of labour, capital, and funds have significant positive relationships at 1% significance level and have a direct effect on the total revenue. As can be seen, the bank size, equity to total assets and financing to total assets ratio also denotes some degree of positive relationship with the total revenue. However, the results are at varying level of significance of 10%, 5% and 1% respectively as indicated in the findings presented in Table 8.6. This result suggests that among all the variables, the size of a bank is not the main contributor in generating revenues (based on 5% significance level).

As the findings in Table 8.6 shows the estimated H-statistic is 0.9366, this implies that the Islamic banking industry in Malaysia is in monopolistic competition condition due to the score is in between zero and one. The adjusted R^2 denotes that the selected

independent variables predicted 96.15% of the variation in total revenue. The VIF score is less than 10, which also suggests that multicollinearity is not an issue in the model.

For the above test results to be valid, the Malaysian Islamic banking industry should be in the end equilibrium during this period. The equilibrium position in the banking sector is assessed by estimating the equation with ROA as a dependent variable that is presented in the last two columns of Table 8.6. The calculation of H-statistic for the second equation is statistically equal to 0 indicates that it is in the long-run equilibrium. Moreover, the Wald test does not reject the null hypothesis $H=0$ (at 1% significance level), which leads to conclude that the Islamic banking industry is in the long-run equilibrium over the period of 2008 to 2012.

As for the adjusted R^2, it signifies that only 45.31% of the variability of ROA is predicted by selected independent variables with equity to financing shows a positive relationship with ROA at 5% significance level. Once again, a VIF score of less than 10 suggests there is no element of multicollinearity in the second model. Both equations consist of 80 bank-year observations.

8.4   CONCLUSION

The results presented in this chapter suggest that Islamic banks in Malaysia earned its revenues in monopolistic competition condition from 2008 to 2012. This result is consistent with the previous studies by Abdul Majid and Sufian (2007), who examined the competitive state of the same market but between the 2001 to 2005 period. However, it should be noted that the H-statistic score had moved nearer to one, which means that the market had moved towards perfect competition or natural competition. Besides that, the results of this study also consistent with studies of , Pawlowska (2005), Yildirim and Phillippatos (2007), Al-Muharrami (2009), and Arrawatia and Misra (2014). These studies found that the H-statistic scores are between zero and one, which implies a monopolistic competition market. Under monopolistic competition, the potential entry of a new competitor leads to contestable market equilibrium and income increases less than proportionally to input prices, as the demand for banking products and services that the individual banks encounter is inelastic.

As for HHI and CRk, the results show that the Islamic banking industry in Malaysia is moderately concentrated with monopolistic competition market. This result is consistent with the PR H-statistic result discussed earlier.

BNM plays a vital role in providing a competitive financial system and ensuring stability in the system. After the financial crisis that hit the country in 1997-1998, BNM took several measures to strengthen the system. It started with a merger exercise between the domestic Islamic banks, which ended in December 2000. This has direct impact on the Islamic banks, since the majority of domestic Islamic banks are subsidiaries of conventional commercial banks except for BIMB and BMMB. The intention was to create economies of scale in terms of the operations, maintain high level of capital, and increase the efficiency. Next, BNM introduced the Financial Sector Masterplan (FSMP) in 2001. Among the key features of the plan is to further liberalising of the financial services sector with foreign Islamic banks being allowed to operate in the country. Al Rajhi, KFH, and Asian Finance Bank were among the earlier recipients of new licenses, together with the existing subsidiary of foreign conventional banks such as HSBC Amanah, OCBC Al-Amin, and Standard Chartered Saadiq. The presence of foreign Islamic banks has surely contributed to competition in the industry as discovered in the findings in concentration ratios, HHI, and PR H-statistic. The results indicate the influence of the decisions made by BNM, which define the market structure of Malaysia's Islamic banking industry as moderately concentrated with monopolistic competition between 2008 and 2012.

In reflecting on the results in relation to competition condition and market structure, the researcher triangulate the results using CRk, HHI, and PR model. All the methods conclude that between 2008 and 2012, the Malaysian Islamic banking industry operated in monopolistic competition condition with a moderately concentrated market structure. The introduction of foreign Islamic banks caused the market structure to become more competitive and less concentrated by comparing the results that include foreign Islamic banks against results generated with a subsample of domestic Islamic banks only. This result is consistent with the previous studies, such as Abdul Majid and Sufian (2007), who examined the competitive state of the same market between the 2001 to 2005 period. However, it should be noted that the H-statistic score had moved nearer to one,

which means that the market had moved towards perfect competition or natural competition. Besides that, the results of this study are also consistent with studies of Claessens and Laeven (2004), Pawlowska (2005), Yildirim and Phillippatos (2007), Al-Muharrami (2009), and Arrawatia and Misra (2014). These studies found that the *H*-statistic scores are between zero and one, which implies a monopolistic competition market. Under monopolistic competition, the potential entry of a new competitor leads to contestable market equilibrium and income increases less than proportionally to input prices, as the demand for banking products and services that the individual banks encounter is inelastic.

In conclusion, the triangulation of three empirical results suggests that BNM plays a vital role in providing a competitive financial system and ensuring stability in the system. After the financial crisis that hit the country in 1997-1998, BNM took several measures to strengthen the system. It started with a merger exercise between the domestic Islamic banks, which ended in December 2000. This has direct impact on the Islamic banks, since the majority of domestic Islamic banks are subsidiaries of conventional commercial banks except for BIMB and BMMB. The intention was to create economies of scale in terms of the operations, maintain high level of capital, and increase the efficiency.

It should be noted that the BNM introduced the Financial Sector Masterplan (FSMP) in 2001. Among the key features of the plan is to further liberalisation of the financial services sector with foreign Islamic banks being allowed to operate in the country. Al Rajhi, KFH, and Asian Finance Bank were among the earlier recipients of new licenses, together with the existing subsidiary of foreign conventional banks such as HSBC Amanah, OCBC Al-Amin, and Standard Chartered Saadiq. The presence of foreign Islamic banks has surely contributed to competition in the industry as discovered in the findings in concentration ratios, HHI, and PR *H*-statistic. The results indicate the influence of the decisions made by BNM, which define the market structure of Malaysia's Islamic banking industry as moderately concentrated with monopolistic competition between 2008 and 2012. The market structure and nature of the competition in the country resulted in the domestic Islamic banks to be better equipped in managing the challenges ahead of them. Due to recent mergers between domestic

banks and enhancement in technology, the domestic Islamic banks were found to be more profitable and more efficient than the foreign Islamic banks. However, the changes in regulatory framework in the form of IFSA, domestic economic uncertainties, and competitive labour market might change the landscape of the sector, and might be demanding to forecast.

The following chapter concludes the research with the reflection on the main findings of the study, while offering recommendations for future research.

Chapter 9

CONCLUSION AND RECOMMENDATION

9.1 INTRODUCTION

The objective of this final chapter is to draw conclusions on the main findings, discuss the limitations of the study, and offer recommendations for future research endeavours.

The format of this chapter is organised into four main sections. The first section summarises the reflection of the study. The next section highlights the limitation of the study as well as the recommendations for further research. Finally, the chapter concludes with a few closing remarks.

9.2. THEORETICAL REFLECTIONS

Chapter 6 analysed the financial performance of 16 Islamic banks in Malaysia using 13 financial ratios between FY2005 to FY2012. The ratios are grouped into profitability, liquidity, risk and solvency, and commitment to economy and Muslim community ratios. The selected ratios are adopted from Samad and Hassan (1999), who evaluated the performance of BIMB against eight major conventional banks in Malaysia between 1984 and 1997. Samad and Hassan (1999) based their inter-bank analysis on Sabi (1996), who compared the performance of domestic and foreign banks in Hungary for the 1992 and 1993 period. However, Samad and Hassan (1999) modified Sabi's model in order to be better suit with Islamic banks. Hence, this study adopted the revised ratios by Samad and Hassan (1999).

As for the efficiency analyses, the study applied the DEA and Malmquist Productivity Index due to its flexibility, applicability on multi-input and multi-output variables, and its extensive use in various researches, especially for developing countries like Malaysia. The empirical procedure in the study is aligned with Staat (2002) where the findings note the effect of sample size towards the DEA efficiency scores. It is also argued that applying the DEA approach is deemed to be error free in the data. However,

Seiford and Thrall (1990) concluded that in terms of efficiency calculation, DEA is a more robust approach because it measures the relative efficiency of each firm based on the efficiency frontier that is constructed from the actual data. This study employed the intermediation approach which assumes that banks operate as an intermediaries between lenders and depositors and hence accept deposits and other funds to provide financing and alternative investments. The intermediaries approach has been used in many of previous studies including Johnes *et al.* (2014), Pasiouras (2008), Sufian (2007), and Matthews and Ismail (2006). Accordingly, the outputs chosen for this study are total financing (loans) and other earning assets. As for the inputs, they are defined as total deposits (deposits and short-term funding), personnel expenses and total equity. A similar set of inputs was used in previous studies (Beccalli *et al.*, 2006; Darrat *et al.*, 2003; Denizer *et al.*, 2000; Johnes *et al.*, 2009; Mokhtar *et al.*, 2008). Additionally, Coelli *et al.* (2005) suggested to use a distance functions similar (extension) to DEA *i.e.* Malmquist Productivity Index in measuring technical efficiency change and technical change elements. This method is suitable in describing multi-input and multi-output functions, which are related closely to banking sector. Coelli *et al.* (2005) further explained that the index measures the productivity change between two data points by calculating ratios of a particular value (increase/decrease rate) between two periods. Similar to financial ratios, efficiency analyses selected 16 Islamic banks in the country. However, the period chosen is from FY2008 to FY2012 in order to get the highest number of observations based on a balanced panel data.

The third empirical results utilises CR_k, HHI and PR model in measuring the concentration level, market structure, and nature of competition between Islamic banks in the country. Bikker (2004) explained that factors such as easy-to-use and limited data requirements caused the CR_k to be one of the most frequently used in measuring concentration in banking industry. The CR_k derived from the ratio of market share owned by the largest k banks in the industry, where k is a specified number of banks, often by looking at top four of the largest companies, or sometimes in a smaller or larger number (Young and McAuley, 1994). The ratios are very useful in determining the degree of the market structure based on the market control of the biggest firms in the industry (Al-Muharrami *et al.*, 2006; Bikker and Bos, 2008; Bikker and Spierdijk, 2009). Case *et al.* (2009) described HHI as an index of market concentration derived

by calculating the sum of the squares of market shares for each firm within the industry. Bikker (2004) considered HHI as one to the widely used measurement of concentration in theoretical literature and even serves as a standard in evaluating concentration in various industries, including banking. The PR model is a practical method of measuring the market conditions due to its simplicity and clarity. Less constraints are faced for the input used for the computation as it is based on the bank level data *i.e.* revenue that is likely to be observable compared to other output prices that are required for other methods (Brissimis and Delis, 2011). The selection of CR_k, HHI and PR approaches are made due to the fact that these methods are reliable, easy to use and understand, proven, and vastly applied in various banking markets (Al-Muharrami, 2008, 2009; Al-Muharrami *et al.*, 2006; Casu and Girardone, 2009; Molyneux *et al.*, 2010; Nguyen and Stewart, 2013; Pawlowska, 2005; Simpasa, 2013; Sufian and Shah Habibullah, 2013). However, it is noted that one of its limitation is related to the cost structure that is homogenous across all banks in the sample size.

The study also validates the relationship between the impact of competition especially from foreign Islamic banks and the performance of Islamic banks in the country. The outcome of the efficiency computation based on the models applied is open to different views and perceptions that lead to difficulty in validating the results. Clearly, different country and the market has its contributing factors such as increasing competition and contestability that might affect the efficiency level differently. Due to this, Bikker and Bos (2005) pointed out that there is no sound theory supplying the right distribution of the efficiency term in considering the best practise in one country or market to another. Hence, the interpretation of the result for efficiency is based merely on observed trends. This analysis has similar consequences where when the level of competition increases, it leads towards lower profit margin, higher cost efficiency, lower profit efficiency, and cost reduction (Bikker and Bos, 2005).

9.3 REFLECTION ON THE FINDINGS

This section summaries the novel contributions made by this study. As mentioned in the introduction and methodology chapters, the study is conducted to assess the significance of Malaysian Islamic banking after three decades since the introduction of the first Islamic bank. In doing so, the study aimed at evaluating the performance and competition among the Islamic banks in the country. Nevertheless, the objective of the research was not only focusing on the competition level between the banks but to also assess the banks' contribution towards the Malaysian Islamic banking sector. Hence, the study covers three primary areas. First, to measure the performance of the Islamic banks in Malaysia by using financial ratios, data envelopment analysis (DEA), and the Malmquist Productivity Index. Second, to compare and evaluate the nature of competition and market structure of the Islamic banks in the country by employing the CR_k, HHI and PR model. Lastly, to validate the relationship between competition among Islamic banks in Malaysia and their financial performance.

The overall results from financial ratios indicate that the domestic Islamic banks are in a better position in terms of profitability, but the foreign counterparts surpassed the domestic Islamic banks in liquidity and risk and solvency ratios. There is little difference between the two in commitment to the economy and Muslim community ratios. However, the domestic Islamic banks can improve further to match the foreign Islamic banks in terms of providing *mudarabah* and *musharakah* financing.

When looking at the performance of individual banks, the top banks that stand out in profitability ratios are Public Islamic and AmIslamic. As a subsidiary of Public Bank, Public Islamic has the access to its parent company's huge client base of businesses and high-net worth individuals to tap into. This clientele is usually those who are considered premium and sought after by any banks (large capital with low credit risk). Meanwhile, AmIslamic is the leader in retail financing especially in hire purchase (car financing). On the other hand, the worst performers include Al Rajhi, Asian Finance Bank, and BIMB. This is expected since Al Rajhi and Asian Finance suffered losses especially during their early years of operations.

For liquidity ratios, AmIslamic, Al Rajhi, and HSBC Amanah are among the top three in the category whereas BIMB and BMMB sit at the bottom of the table. Banks with high liquidity ratios indicate the banks' ability to fulfil its short-term debt obligations without relying on non-current assets.

Asian Finance Bank, Al Rajhi, and HSBC Amanah are the least reliant on debt based on respective debt ratios calculated throughout 2008 to 2012. Conversely, Hong Leong Islamic Bank, Standard Chartered Saadiq, and OCBC Al-Amin depend heavily on debt in their operations. The foreign Islamic banks especially from the Middle East like Al Rajhi and Asian Finance Bank are usually equipped with abundance of cash reserves and are less likely to borrow money in order to develop.

For the commitment to the economy and Muslim community ratios, Public Islamic and Maybank Islamic are the most supportive in long-term financing projects, BIMB and BMMB invested more in government-linked investments as compared to the rest, and HSBC Amanah and KFH provided more *mudarabah* and *musharakah* related financing.

When comparing the financial ratios results with DEA results, there are some banks that excel in both measurements thereby indicating some degree of relationship between efficiency and performance. Banks such as Alliance Islamic, CIMB Islamic, and Maybank Islamic for domestic Islamic banks are considered efficient under DEA results and performed well in ratios of ROA, ROE and Profit Expense Ratio respectively. The three banks are also considered among the most efficient banks for the whole population of Malaysian Islamic banks. Maybank Islamic and CIMB Islamic are the top two Islamic banks in the country with presence outside Malaysia, especially in other Southeast Asian countries. Their vast number of branches and advancement in Information and Communications Technology (ICT) allows them to offer better solutions as compared to its competitors. Alliance Islamic, which is one of the most improved banks with a growth in retail banking especially for SME financing, completes the top three Islamic bank in the country in terms of efficiency and performance.

As for foreign Islamic banks, KFH and Standard Chartered Saadiq were found to be performing well for both financial ratios and DEA. Their superiority in liquidity ratios places them among the most efficient foreign Islamic banks in the country, together with OCBC Al-Amin. These banks are known in concentrating in financing such as personal and project financing, which considered less priority for top banks like Maybank Islamic and CIMB Islamic. These banks capitalise in this section of banking.

Based on the Malmquist Productivity Index in Table 7.4, it is interesting to explore the performance of Asian Finance Bank and Hong Leong Islamic in the future since they are the most progressed banks in TFP. Asian Finance Bank, who focuses on wholesale banking and Hong Leong Islamic, which took over EONCAP Islamic Bank in 2011 may have a change in fortune in the forthcoming years. It also important to see how Maybank Islamic and Standard Chartered Saadiq react to competition since their TFP and technological change are in decline state, -13.4% and -11.8% respectively. Nevertheless, Maybank Islamic and Standard Chartered Saadiq are still considered the current top Islamic banks in the country.

The discussion of the literature review in Chapter 4 highlighted the competition in the banking sector in Malaysia. The country has been facing a scenario where current and new players in the industry are competing. This creates a stiffer competitive environment in the banking sector. Supports from the government as well as changes in the policy, do have an effect on the performance of Islamic banks. The change of policy towards liberalisation in Malaysia has opened opportunities towards the banking sector that eventually created a competitive environment prior to the changes implemented. Due to the above factors, it is foreseen that the banking sector is to face further stiffer competition as a result of the potential growth of Islamic banks globally.

A previous study related to the Islamic banking industry in Malaysia indicates that Malaysia's market structure is categorised under monopolistic competition and in line with this, the competition level is expected to grow continuously in the future (Abdul Majid and Sufian, 2007). One of the factors contributing towards the Islamic banking sector's continuous growth is the public acceptance towards the banking concept based on Islamic regulations. This creates an opportunity for the banks in adopting Islamic

banking that will intensify the competition in the sector. Therefore, efforts taken by BNM play a significant role towards the growth of the Islamic banking industry in the country. On top of that, with the introduction of FSMP in 2001, BNM created various institutions in supporting its ambition to become the leader of Islamic finance. Institutions such as MIFC, INCEIF, and ISRA, which have its dedicated roles further accelerate the growth of Islamic finance in the country. On top of that, one of the agenda in FSMP was by allowing new foreign Islamic banks to operate in the country. It encourages innovation and competition within the sector which eventually contribute towards the stability of Malaysian banking sector. Government policies related to tax incentives, business-friendly policies and comprehensive regulatory and supervisory frameworks also ensure the conduciveness of the market, which benefit all the stakeholders in the industry (Thomson Reuters and Islamic Research and Training Institute (IRTI), 2015).

The PR H-statistic from Chapter 8 shows that Malaysian Islamic banking industry's market structure was in monopolistic competition condition from 2008 to 2012, which is consistent with a number of previous studies (Abdul Majid and Sufian, 2007; Al-Muharrami, 2009; Arrawatia and Misra, 2014; Claessens and Laeven, 2004; Pawlowska, 2005; Yildirim and Phillippatos, 2007). It is also fascinating to see that the H-statistic score has moved nearer to one, which means that the market is moving towards perfect competition or natural competition.

As for HHI and CRk, the results show that the Islamic banking industry in Malaysia is moderately concentrated with monopolistic competition market. This result is consistent with the PR H-statistic result. Additionally, all concentration ratios and HHI are computed for the subsample of domestic Islamic banks only. This will test the robustness of the findings on the impact of entrance of foreign Islamic banks in Malaysia. The different scores between the indices for all banks and subsample of domestic Islamic banks are significant in all concentration ratios and HHI based on each p-values at 1% significance level except for CR$_2$ of deposits, which is significant at the 5% significance level. Indeed, it can be concluded that foreign Islamic banks may have an impact on the market structure of Malaysian Islamic banking industry. The effort made by BNM toward the liberalisation of the financial sector in the country

seemed to contribute to the competitive environment. The merger exercise between the domestic Islamic banks and allowing new foreign players in the industry during late 1990s and early 2000s respectively, encouraged more innovation and competition. BNM's plan proved to be successful in making the financial system more resilient, competitive, and dynamic.

9.4 LIMITATIONS OF THE RESEARCH

Various steps were taken to ensure the accuracy of the conceptual and methodological outcome of the study. Nevertheless, there were several limitations identified related to the study that need to be taken into account explicitly in assessing the outcomes, as well as the implications of the findings.

One of the limitations of the study is the availability of data related to the scope of the study. Although the Islamic banking sector has indicated a progressive upward trend since 1980s, most of the banks started its Islamic banking operation through the 'Islamic window' except for the two full-fledged Islamic banks in Malaysia, BIMB and BMMB. Most of the full-fledged Islamic banks commenced their operation in late 2000. Therefore, the study is based on limited years according to the banks commencement based on Islamic operations.

Another limitation is related to the DEA, which is based on the mathematical algorithm without considering specific conditions and restrictions of the banks (Mostafa, 2007). Therefore, the computation is based on chosen inputs with some beyond the control of the banks. In relation to this, it may not always be possible for banks to be efficient. Moreover, due to the limited available data, the selected inputs might not be exhaustive which might affect the research outcomes.

Despite these limitations, it is hoped that the findings from the study have generated further interest in the topic. The findings may eventually lead to further research that will contribute towards further understanding and positive growth in the Islamic banking sector in Malaysia. The findings from the study are anticipated to contribute towards the existing knowledge in regards to the performance of the Islamic banks in

Malaysia. It assists in facilitating a sense of direction for a sustainable competitive environment in the future, particularly in the Islamic banking operations in Malaysia.

9.5 RECOMMENDATIONS FOR FUTURE RESEARCH

Despite the limitations in conducting the research, several crucial findings were developed from the research. The findings from the research could be converted into several implications towards the Islamic banking sector that leads to further consideration towards generating recommendations for future research. Hence, future studies that overcome the identified limitations of this research are strongly recommended.

The scope of the research could focus on the overall Malaysian banking sector by comparing both Islamic and conventional banks in determining the factors contributing towards better performance of the banks. Despite focusing only in Malaysia, the research could also expand its scope in comparing Islamic banks in the GCC with similar banking concept with Malaysia. By comparing the performance of the banks in another country, it will help Malaysia in determining its strength and weaknesses. The benchmark will allow the country to improve its performance to maintain the country's objective to be the hub for Islamic finance.

Furthermore, availability of new data set could further enhance the study because a number of Islamic banks in Malaysia started to grow from 2008 onwards. Studies could observe the trend against the gradual effect on competition over time. This will help in providing a clearer view on how the Islamic banking sector's performance has improved throughout the years as well as identifying opportunities for further future development.

BNM's decision to introduce IFSA in 2013 may have some impact on the market structure and competition between Islamic banks. Reclassification of Islamic deposits and investment accounts with new disclosure may increase the transparency and stimulate more innovative new products to the market. It will be interesting to see the impact of IFSA on the Malaysian Islamic banking industry.

With regards to the DEA, different sets of inputs and outputs could be used to test the robustness of the results. In fact, DEA allows the application of multi-input and multi-output variable. By doing so, the results will indicate various scenarios that provide further in-depth study of the bank performance. In addition, a three-stage DEA can also be employed. Moreover, various additional complementary models such as parametric and nonparametric tests could be applied for the measurement of concentration and competition within the banking sector. This could assist in overcoming the identification problems which arise when a study is limited based on a certain number of models in analysing the bank's performance and level of competition.

9.6 EPILOGUE

As mentioned in Chapter 1, this study aimed at assessing the significance of Islamic banks in Malaysia by evaluating the competition level between the banks. It intended to measure the impact made by foreign Islamic banks in the country with the objective of assessing its contribution to the growth of the Malaysian Islamic banking industry.

The empirical analyses have provided novel findings that are relevant towards the significance of Islamic banking industry and the impact of foreign Islamic banks in Malaysia. The selected financial ratios indicated that domestic Islamic banks performed better during the 2005 to 2012 period in terms of profitability, but the foreign Islamic banks excelled in terms of liquidity, risk, and solvency ratios.

DEA results showed that the domestic Islamic banks are considered more efficient with the majority of domestic Islamic banks outperforming the foreign Islamic banks. Banks like Maybank Islamic, CIMB Islamic, and Alliance Islamic are considered among the top performers for technical efficiency and scale efficiency. The study also found that based on the Malmquist Productivity Index, the least efficient banks based on DEA have improved in technical efficiency, technology, and TFP.

The study also found that between 2008 and 2012, the Malaysian Islamic banking industry operated in monopolistic competition conditions with a moderately concentrated market structure. The introduction of foreign Islamic banks caused the market structure to become more competitive and less concentrated by comparing the

results that include foreign Islamic banks against results generated with a subsample of domestic Islamic banks only. Therefore, BNM's financial reform and liberalisation of financial system proved to induce competition and making the financial system more resilient, competitive and dynamic. The performance of Islamic banks registered yearly increases with the least performing Islamic banks catching up to the top performers.

As a result, this thesis has achieved its aims and objectives and hence, is now completed. It is hoped that more research in this area will be carried out in the future, especially research that takes into account the recommendations put forward by this study.

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