

**DETERMINANTS OF CREDIT RISKS IN ISLAMIC BANKS  
IN MALAYSIA**

**By**

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## **ABSTRACT**

The concept of risk was well known to most of us. It has become an important tool in making decision when it is possible to measure it and to assign values to different situations. However the changes in the global finance environment has make Islamic banking institutions are more vulnerable to risks. Many theoretical studies on Islamic banking were conducted with the focus on Islamic modes of financing and their ability to perform financial intermediation for catering to the needs of people. This paper examines the determinants of credit risk in Islamic banks in Malaysia. The study uses secondary data obtained from the annual report of selected Islamic banks during the period from 2008 to 2013. All the selected banks were local Islamic banks in Malaysia. This study uses non-performing financing (NPFs) as a proxy for credit risk which is dependent variable. The independent variables consists of three macroeconomic variables Gross Domestic Product (GDP), Base Financing Rate (BFR) and Consumer Price Indicator (CPI). There are also six other variables (bank specific) that are used as internal variables. These are Bai' Bithaman Ajil (BBA), Murabahah, al-Ijarah Thumma al-Bai' (AITAB), total assets, other contract (OCONT) and Profit Margin (PM). In this study it has been found that GDP is significant and negatively related to credit risk, making the finding similar with past studies.

## ABSTRAK

Pengenalan kepada konsep dan pengurusan risiko adalah diketahui umum oleh kebanyakan kita. Ia merupakan satu kaedah yang penting dalam membuat keputusan dengan memberikan nilai kepada situasi yang berbeza. Walau bagaimanapun, perubahan dalam persekitaran kewangan global telah membuat institusi perbankan Islam adalah lebih terdedah kepada risiko. Banyak kajian teori mengenai perbankan Islam telah dijalankan dengan tumpuan diberikan kepada kaedah pembiayaan Islam dan keupayaan mereka untuk melakukan pengantaraan kewangan untuk memenuhi keperluan pengguna. Kajian ini mengkaji penentu risiko kredit di bank-bank Islam di Malaysia. Kajian ini menggunakan data sekunder yang diperolehi daripada laporan tahunan bank Islam yang terpilih merangkumi tempoh dari 2008 hingga 2013. Bank-bank terpilih adalah bank-bank Islam tempatan di Malaysia. Kajian ini menggunakan pembiayaan tidak berbayar (NPF) sebagai proksi untuk risiko kredit yang merupakan pembolehubah bersandar. Pembolehubah bebas terdiri daripada tiga pembolehubah makroekonomi iaitu Keluaran Dalam Negara Kasar (KDNK), Kadar Pembiayaan Asas (BFR) dan Harga Pengguna Indicator (IHP). Terdapat juga enam pembolehubah lain (bank tertentu) yang digunakan sebagai pembolehubah dalaman. Ini adalah Bai 'Bithaman Ajil (BBA), Murabahah, al-Ijarah Thumma Al-Bai' (AITAB), jumlah aset, kontrak lain (OCONT) dan Margin Keuntungan (PM). Dalam kajian ini, didapati bahawa KDNK memberi impak negatif kepada hal yang berkaitan dengan risiko kredit, bertepatan dengan keputusan kajian-kajian lepas.

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## **LIST OF ABBREVIATIONS**

AITAB	Al-Ijarah Thumma al-Bai'
BBA	Bai' Bithaman Ajil
BFR	Base Financing Rate
BIMB	Bank Islam Malaysia Berhad
BMMB	Bank Muamalat Malaysia Berhad
BNM	Bank Negara Malaysia
CPI	Consumer Price Indicator
GCC	Gulf Cooperation Council
GDP	Growth Domestic Product
IBF	Islamic Banking And Finance
INCEIF	International Centre for Education in Islamic Finance
ISRA	International Shariah Research Academy
KLSE	Kuala Lumpur Stock Exchange
MIFC	Malaysia International Financial Centre
NSAC	National Shariah Advisory Council
NPF	Non-Performing Financing
NPL	Non-Performing Loans
OCONT	Other Contract
OIC	Organization of Islamic Conference
PLS	Profit-Loss Sharing
PM	Profit Margin
SAB	Shariah Advisory Board
SAC	Shariah Advisory Council
SPTF	Skim Perbankan Tanpa Faedah
VAR	Value at Risk
VIF	Variance Inflation Factor

## CHAPTER ONE

### INTRODUCTION

#### 1.0 Introduction

Islamic banks operate based on the stringent *Shariah* regulation, as it well justified by Masood (1995) that Islamic banking operations aim at safeguarding the interest of the public, or in Islam particularly known as *maslahah*. The cornerstone or the core scruples of Islamic banking is the prohibition of *riba* while it enjoins the trade and commerce activities of banking operations.

One of the main features of Islamic banking is regarding the variety of financing contracts and facilities they offer. Different types of financial contracts which have been advanced by Islamic banks are based on two principles; the profit loss-sharing principle and the mark-up principle. The profit loss-sharing principle includes the contract of *mudarabah* (venture capital) and *musharakah* (partnership contract) while the instrument based on the mark-up principle is *murabahah* (resale with pre-agreed profit), *bay as-salam* (forward sale contract), *ijarah* (leasing) and *ijarah wa iqtina* (operating and financial lease). Based on these principles, Islamic banks offer financing products without contravene *Shariah* and ethics principles in order to remain competitive in the market which is dominated by conventional banks.

The Islamic banking and finance (IBF) industry, a phenomenon of the last four decades has, according to estimates by Ernst and Young (2012), grown to more than 1.8 trillion dollars in total assets from scratch, though it remains still relatively small in comparison to the global banking industry. According to the Banker (2013), there were 14 Islamic banks worldwide each with total assets of more than two trillion dollars. Yet the IBF continues to grow at a rate of over 10% annually according to an HSBC (2012) report, which projects the potential size of the Islamic Finance industry to be around USD 4.4 trillion in 2020. The growing demand for Islamic finance products has led to the development of innovative products and to the increasing number of Islamic financial institutions globally. There has been concurrent strengthening of legal and regulatory frameworks which positively feeds back into the growth in the industry.

Though the bulk of the industry still lies in Southeast Asia (Malaysia) and the Middle East (Saudi Arabia, Gulf Cooperation Council, GCC) besides Iran, the IBF has generated widespread interest in the West as well. Major international banks, for example, Citibank, UBS, HSBC, Barclay and Standard Chartered, have started offering Islamic products to meet the demand for Islamic financial instruments in the U.S. and Europe. In 2004 HSBC realizing that 25% of the world's Muslims live where it operates created 'HSBC Amanah, a separate Islamic banking unit, to co-brand financial products targeting the Muslims. In Malaysia, HSBC Amanah has

become the widest foreign avenue of Islamic banking and in 2006 the division accounted for some 10% of HSBC's net income.

In the immediate aftermath of the 2008 Global Financial Crisis (GFC), some scholars have suggested that Islamic banking may be an effective alternative in forestalling systemic risks. For example, in a statement by the Vatican (Middle East Online, 2009) it was suggested that banks should look at the rules and regulations of Islamic banks to reconstruct confidence amongst their investors which has been lost during the 2008 global economic crisis. The principle of Islamic banks bring both parties (the banks and clients) closer with good business practises which should mark every financial service. Others have claimed that "those who have been in Islamic banking for a long time now feel secured, due to its growth and stability" (Ambah, 2008). However, in order to sustain its growth Islamic banks should examine their risks profile and risk exposures to constantly on guard for any financial vulnerability due to high risks.

While Islamic banks are sheltered from the adverse effect of financial risks, partly due to the Islamic financing contracts, the conventional banks however faced many negative effects. For example in 1995, the banking industry had a shock awakening when Barings Bank, the oldest London merchant bank collapsed in the year. Apart from that, Sumitomo Corporation lost \$2.6 billion on copper derivatives; Metallgesellschaft AG lost DM1.8 billion on oil futures while Orange County California lost on interest rate derivatives (Bacha, 2001). During 1997 financial crisis, most financial institutions

in East Asia were greatly affected (Gup and Kolari, 2005). The crisis caused a RM45, 304 million reduction in total assets, a RM2,132 million loss in deposits, and RM7,443 million contraction in loans and advances (Bank Negara Malaysia, 1999).

The relationship and own central bank requires different treatment that differs from conventional bank, for example in providing liquidity. They will provide financing based on *Qardh Hassan*, which is free interest financing (Wesabi, 2012).

On the other hand, Bank Islam Malaysia Berhad (BIMB) had shocked Malaysians with the news a loss of RM450million were reported in 2005. This was the first time ever that the bank had gone into the red line (New Strait Times, September 12, 2005) and was a consequence of the financial crisis in 1998. It was also reported that the NPLs of the bank were close to 21 percent, well above the market average of 8 percent (BIMB Annual Report, 2005). Even though risk management in banking is not a new activity, the financial crisis which exposed the adverse effects of risks on bank performance risk that more emphasis should be given to managing major risks such as market, credit and operational risks. Given today's challenging financial and economic environment, adopting a balanced risk-return profile is important in striving for continuing enhancement of shareholders' value.

Eventually, Islamic banks should pool all their resources in to strengthen Islamic financial market which is currently weak, or form strong one to provide their benchmarked rates (Fleifel, 2009).

## **1.1 Problem Statement**

Banking activities is always associated with risks and there is hardly banking operation without the risk (Anderson, 2001). Banks will face lot of problems when exposed to credit risks. In order to monitor the credit risk, bank has to take effective measures which is critical to credit assessment.

Islamic bank face many types of risk such as credit risk, market risk, operational risk, liquidity risk, transparency risk, profit rate risk. However among the many types of risk, credit risk is the highest risk faced by Islamic banks. Why is credit risk the highest? This is due to financing being the largest activities in Islamic banking. This is evidence from the balance sheet structure. For example in the case of Bank Muamalat Berhad in Malaysia; the financing of customers constitute 49% of the total assets. And for Maybank Islamic the financing of customers made up 69% while Affin Islamic Bank is 47% of its total asstes. The impaired financing ratio for these three banks, Bank Muamalat, Maybank Islamic and Affin Islamic Bank is 4.7%, 0.46% and 2.15% respectively. Impaired financing ratio which is likely financing to experience loss will reflects the credit risk level of a bank. Since credit risk contribute to the probability of loss of

income for an Islamic bank, therefore it is a major problem for Islamic banks to find ways to mitigate the credit risk in order to reduce the loss.

The first and second process in risk management is risk identification and risk assessment. The problem is to ascertain the level of credit risk incurred by each Islamic banks from 2008 to 2013 relative to the banking industry level. This would illustrate the bank's loan quality and credit risk exposure compared to the industry level. This bank to bank analysis is not available in the BNM's website or database. 2008 were chosen because this was the starting year for most Islamic banking commencement in Malaysia. The implementation of Islamic banking services is upgraded onwards.

Diversification is one of the strategies to reduce the credit risk. In the case of Islamic banks, diversification is one of the strategies used to reduce credit risk. Diversification is in term of economic purpose, by contracts, and by type of customers, by profit rate and terms of financing. Many studies in the past have only covered the investigation of conventional bank diversification by types, which is credit risk management and credit risk assessment (Ahmad, 2010). However, there seems to be huge missing on the past studies or document record the effect of Islamic contracts diversification on credit risk of Islamic banking. This is a gap of which this research aims to fulfil.

In Islamic banks, risk management has slight different from that in conventional banking; however some kinds of risks have

specific features of Islamic financing contracts, in addition to risks that are unique to Islamic banking sector and related to *Shariah* compliance and different instruments that Islamic bank adopt (Said et al.2000).

Akkizidis, et al (2008) has stated that credit risk in Islamic banks is highly generated from the Islamic contracts especially in the case of *Musharakah* and *Murabahah* contracts. In Malaysia, BBA Contracts which are *Murabahah* contracts have been mentioned to have high credit risk among other financing contracts. However, few recent studies cover analysis of diversification by Islamic contracts. This shows that there is a research gap whereby very few or hardly any studies done on role of diversification by Islamic contracts covering 2008 to 2013. This gap will be addressed in this study (Rosly, 2005) as to identify which of the Islamic financing contract is more significant to credit risk of Malaysian Islamic banks.

Choong et al (2006) argue that the practice of Islamic banking in Malaysia however deviates from the profit and loss paradigm, which makes the practise is similar to conventional banking. Therefore they recommend that Islamic banks should be treated according their commercial counterparts for the purpose of financial sector analysis.

Diversification by Islamic contracts or loan disbursed to customers were categorised into *Bai Bitthaman A'jil* (BBA), *al-Ijarah Thumma al-Bai'* (AITAB), *Murabahah* and other financing contracts. Ahmad et al, (2009) has carried out the research on perception of risk



management on credit risk by contract. However, their study was only utilised descriptive analysis. The gap is that there has not been any regression analysis done to identify the relationship between each of the financing contract with the credit risk of the Islamic banks.

*Al-Ijarah Thumma al- Bai'* or known as AITAB has not been investigated in term of Islamic Bank relationship with credit level whereas it constitutes 27% and 42% of total financing for Maybank Islamic (2013) and Bank Islam Malaysia Berhad (2013), respectively. This is important to find out this type of diversification because the bank management does not have record to date of AITAB influences on credit risk of Islamic banks. Therefore, banks might not have appropriate risk management strategies to mitigate the effects of AITAB on their credit risk.

On the average, *Murabahah* constitutes 27%, 18% and 8.6% to the total financing of major Islamic banks such as Affin Islamic Bank, Maybank Islamic and Bank Muamalat (2013) respectively. This exposure also needs to be tested against credit risk level of Islamic banks. To the knowledge of the researcher, such test has not been documented and published in previous research with regards to *Murabahah's* influence on credit risk.

Few studies found that GDP has a significant variable in explaining credit risk. Beck, et al (2013) said that GDP rate to have significant results to non-performing loans. This has confirmed previous studies by Thiagarajan, et al (2011), Derbali (2011), Aly and

Daly (2010). However in Warue (2013), Salas and Saurina (2002), the study showed that banks accumulate risks more rapidly in economic boom.

Friedman (1969) argues that zero nominal interest rate is essential for efficient resource allocation. Referring to Friedman rule, a classic essay, investors will have no incentive to substitute real resources with money and thus more resources will be channelled into investments. While Islamic banks exclude the interest rates, it will integrate with other rates which is more directly linked to real economic sectors like profit rate for *musharakah* (joint ventures) and *mudarabah* (profit sharing), mark up rates for *murabaha* (sales with specified mark-up rates) and rental rate for *ijarah* (lease). This allow the Islamic banks to operate more efficiently.

## 1.2 Research Question

The questions that guide the research is:

1. What is the level of credit risk experienced by each local Islamic banks in Malaysia over the 2008 to 2013 period?
2. To what extend the external factors (GDP, BFR and CPI), bank financing contracts (BBA, MURABAHAH, AITAB, OTHER CONTRACT) and other bank variables (TOTAL ASSETS, PROFIT MARGIN) correlate with each other?
3. How are the external factors (GDP, BFR and CPI) bank financing contract diversified (BBA, MURABAHAH, AITAB, OTHER CONTRACT) as well as bank variables (TOTAL ASSETS, PROFIT MARGIN) influence credit risk of Islamic banks?

### **1.3 Research Objectives**

1. To determine the level of credit risk experienced by each local Islamic Banks over the 2008 to 2013 period.
2. To conduct the correlation analysis between the external variables (GDP, BFR, CPI), bank financing contracts (BBA, MURABAHAH, AITAB, OTHER CONTRACT) and other bank variables (TOTAL ASSETS, PROFIT MARGIN) and credit risk of each local Islamic banks.
3. To measure the influence of external variables (GDP, BFR, CPI) bank financing contracts (BBA, MURABAHAH, AITAB, OTHER CONTRACT) and other bank variables (TOTALASSETS, PROFIT MARGIN) on credit risk of each local Islamic bank.

## 1.4 Significance of The Study

Many studies in Islamic banking are theoretical and concept-based since the early commencement of Islamic banking (Abdul, 2010). Some studies focused on Islamic banking products. With this study on risks of Islamic bank the knowledge about Islamic banks credit risk would be able to enhance the Islamic banks' financial intermediation roles and to be more efficient in providing financing, for those in need for funding (Eljari, 2003)

However, few studies have been carried out on Islamic banking risk management particularly on Islamic financing contract credit risk. More studies on credit risk of Islamic banks should be conducted since this type of risk is the main risk of Islamic banks besides *shariah* risk. Hence, this study aims to provide better understanding of the analytical aspects to identify factors that affect Islamic banks' credit risk and ways to improve diversification in Islamic banking.

The results should be useful to academicians as they will gain more knowledge in the study of Islamic banking. This will also add to the existing research done in risk management of Islamic banks. Perhaps, it is hope that this research will provide some motivation for greater interests in examining the unique features of Islamic banking.

To the bankers, it is hope that this study will help the bank to formulate strategy in risk management in terms of diversification by contract where it can reduce or increase the exposure of these

contracts in financing according to the sensitivity of contract to credit risk and other types of risks.

Customers on the other hands are expected to have better knowledge in Islamic banks with this research findings and hopefully will help them in decision making when selecting and applying for financing by considering the type of financing contract that best suited their financial capability.

To the central bank, in this case; Bank Negara Malaysia, this research could provide inputs for the central bank to develop new policy to guide the Islamic banks in their financing practices.

## **1.5 Scope of The Study**

This study aims at evaluating the performance of six domestic Islamic banks in Malaysia in terms of their credit risk exposure by using the Islamic financing contract. The scope of study period is between the years of 2008 to 2013. However this study will not include the impact of 2008 global financial crisis since Islamic banks were not adversely affected by the global financial crisis.

This study is limited to data derived from financial statements in yearly annual report of the relevant banks focusing on the relevant factors relating to diversification of credit risk by using Islamic financing contracts. The financial statements are those which are already audited and available for public consumption.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

Islamic financial institutions begins with a number of interest free-savings which is developing at a remarkable pace since its establishment three decades ago. The number of Islamic financial institutions worldwide has risen from one in 1975 to over 300 today in more than 75 countries. With the concentration in the Middle East and Southeast Asia where Bahrain and Malaysia as the biggest hubs, they are also established in Europe and the United States. It is expected to exceed \$250 billion in total assets worldwide with estimation growth at 15 percent a year.

Products of Islamic finance are aimed at Muslim and non-Muslim investors who want to comply with the *Shariah* Islamic laws that govern a Muslim's daily life. The core of these laws is it forbids the practise of giving or receiving interest, as profit earned from money exchanged for money is illegal. Thus, all financial transactions should practise real economic activity which only conforms to Sharia principles (Ghafar, 2010).

The core principles of Islamic banking is free from interest. The introduction of interest made it feasible to engage in speculative activities (Toutouchian, 2009). He also adds that the subprime

mortgage crisis in 2008 was a consequence for violating Friedman's rule. He urge that sufficient allocation of resources would lead to stable prices, full employment and the elimination of stagflation and hence making it more stable macroeconomic environment. This analysis led to belief that Islamic banking system is able to weather any economic or financial crisis better than conventional system through its vulnerability to both interest rates and inflationary fluctuations (Khan, 1985).

## **2.1 Islamic Banking System Overview in Malaysia (2000-2014)**

In Malaysia, the first inception of an Islamic finance institution was the Pilgrimage Fund Board. This institution provides a place for investors to keep their savings in order to meet the cost of pilgrimage to Makkah. It is one form of profitable investment by this institution, and it is still in operation until now. The development of this institution which is also known as "Tabung Haji" in 1963. The idea was mooted out to encourage the Muslims to save for their pilgrimage as the Malaysian Muslims in the past had resorted to various conservative means of savings and keeping their money for the divine journey. Among the objectives is to enable Muslims to have active and effective participations in banking transactions which is permissible in Islam that has been made through their savings.

In 1983, the first full-fledged Islamic banks was established in Malaysia, that is Bank Islam Malaysia Berhad. As for the non-banking



financial service institution, it started with the establishment of the first Takaful or Islamic insurance company under the Takaful Act in 1984. These developments were then expanded with the introduction of Islamic windows by conventional banking institutions in 1993. Islamic products and services were offered by selective conventional banking institutions.

The progress of Bank Islam Malaysia Berhad is very encouraging particularly within 10 years of operation and it was proved to be a viable banking institution with its activity expanded rapidly throughout the country. It was listed on the Main Board of the Kuala Lumpur Stock Exchange (KLSE) on 17 January 1992 (Akram Laldin, 2012).

In order to the Islamic banking industry international through the Islamic windows and making Malaysia as one Islamic finance hub, the Malaysian government opens its markets to international players of the same field. It begins with allowing international banks which operates Islamic product to open their branches in Malaysia ( Akram Laldin, 2012).

Malaysia currently has awarded licenses to three foreign Islamic banks to operate in the country; which is Kuwait Finance House (Malaysia) Berhad, Asian Finance Bank which officially commenced operations in 2006, and al-Rajhi banks which come to operations in 2007 (BNM, Kuwait Finance House, Islamic Banking Research (2010)).

The Malaysian Government has adopted a flexible steps approach to achieve the objectives. The first approach is to disseminate the virtues of Islamic banking. The good quality of Islamic banking on a whole wide basis, aim to attract many players as possible and within the reach all Malaysians. After various considerations of different factors, the Government decided to permit the existing banking institutions to offer Islamic banking services using their current infrastructure and branches.

Due to the effective and efficient mode of Islamic banking, on 4 March 1993, Bank Negara Malaysia introduced an Interest-free Banking Scheme to industrial banking and was later known as Islamic windows in conventional banks ([www.BankNegaraMalaysia.com](http://www.BankNegaraMalaysia.com), 2013).

To date, the number of Islamic financial institutions is increasing in Malaysia and the current statistics is as follows:

Figure 1: List of Islamic Local Banks in Malaysia (2013)

Bank's Name	Total Assets	Net Profit Before Tax
Affin Islamic	12,330,754	428,385
RHB Islamic	29,131,089	1,100,857
Hong Leong Islamic	21,728,546	831,218
Bank Muamalat	21,071,590	916,569
Bank Islam	49,674,545	1,851,278
Maybank Islamic	125,056,697	4,461,652

Source: Respective Bank Annual Report, 2013

Figure 2: List of Islamic Foreign Bank in Malaysia (2013)

Bank's Name	Total Assets	Net Profit Before Tax
Standard Chartered	8,200,808	51,575
Kuwait Finance House	9,396,136	148,578
Al-Rajhi Bank	6,754,636	5,753
OCBC al-Amin	10,125,684	136,297
HSBC Amanah	14,564,398	187,657
Alliance Islamic Bank	6,825,115	74,765

Source: Respective Bank of Annual Report, 2013)

### 2.1.1 Entrance of Foreign Islamic Banks

Islamic finance is experiencing tremendous growth over the world and Malaysia is a powerhouse in its own path. Identified by Ernst & Young as one of the most important markets to drive further globalisation of the Islamic banking industry, Malaysia is one of the six important markets for Islamic banking industry alongside Qatar, Indonesia, Kingdom of Saudi Arabia, United Arab Emirates (UAE), and Turkey. (Ernst & Young World Islamic Banking Report, 2014).

In a report by The Economist, over 20% of Malaysia's banking system was already *shariah* based and *shariah* compliant and the country seems set on its course to capture a larger slice of the global *sukuk* or Islamic bonds market in 2014. (The Economist, 2013)

These achievements are remarkable since the country only has 30 million people with Muslim only 60% of the number. This is different if compared to Indonesia where only 4% of the financial sector in the country is *shariah* compliant, despite being home to the largest Muslim population in the world. (The Economist, 2013)

Data from the Bank Negara Malaysia (2009) shows that there are 16 Islamic banks in the country consisting both local and foreign and these include the Affin Islamic Bank and HSBC Amanah Malaysia. Global Finance, a magazine for international bankers, recognized Maybank Islamic Berhad as one of the World's Best Islamic Financial Institutions in 2013. Maybank is the largest Islamic bank in the country in terms of total assets and market share according to Global Finance. (Global Finance, 2013)

Figure 3: List of Licensed Islamic Banking Institutions in Malaysia

No.	Name	Ownership
1	<a href="#">Affin Islamic Bank Berhad</a>	L
2	<a href="#">Al Raihi Banking &amp; Investment Corporation (Malaysia) Berhad</a>	F
3	<a href="#">Alliance Islamic Bank Berhad</a>	L
4	<a href="#">AmIslamic Bank Berhad</a>	L
5	<a href="#">Asian Finance Bank Berhad</a>	F
6	<a href="#">Bank Islam Malaysia Berhad</a>	L
7	<a href="#">Bank Muamalat Malaysia Berhad</a>	L
8	<a href="#">CIMB Islamic Bank Berhad</a>	L
9	<a href="#">HSBC Amanah Malaysia Berhad</a>	F
10	<a href="#">Hong Leong Islamic Bank Berhad</a>	L
11	<a href="#">Kuwait Finance House (Malaysia) Berhad</a>	F
12	<a href="#">Maybank Islamic Berhad</a>	L
13	<a href="#">OCBC Al-Amin Bank Berhad</a>	F
14	<a href="#">Public Islamic Bank Berhad</a>	L
15	<a href="#">RHB Islamic Bank Berhad</a>	L
16	<a href="#">Standard Chartered Saadiq Berhad</a>	F

\*\*L – Local

F -- Foreign

Source: Bank Negara Malaysia Website October 2014

## **2.2 Risks in Islamic banking**

The meaning of risk has changed throughout the time and it carries various meaning dependent on its outcome. The value of risk is frequently measured but the parameters is always failed to meet the standard designated. To understand the meaning of risk requires lots of time and efforts. Mere study is inadequate to understand the whole meaning of risks. The outcome, or to most of us the result, could be diverge from the paths that lead to the expected or common result. The deviation sometimes leads to potential loss badly. However, the events will still be happen, regardless of the outcome, means with the respect that divergence can be positive (upside) and negative (downside). The positive side of risk is always desirable but rarely possible in everyday life. Eventually, the risk component which individuals and organisations putting most effort to protect and manage with full capability is the negative (downside) risk (Ariffin, 2009).

In a bank, be it conventional or commercial, the whole organisation is inevitably face with a growing number of risks, with the most common risk usually identified are credit risk, liquidity risk, market risk and operational risks. Currently, up to nowadays there was a huge number of new type of risks that all financial institution face from the global markets. According to Iqbal and Mirakhor, 2009, “There are several basic factors leading to these processes such as increased volatility of the financial markets, globalization and increased competition in financial markets, financial innovations and a

drop of traditional banking business practise and regulatory environment of financial institutions, especially banks.

In few of the emergence of many types of risks and the inter-related nature of the risk themselves, risk management has become an integral part of business policy for every bank. To appropriately implement the active risk management process, it is necessary to observe the process through some of its successive stages which differs between conventional and Islamic banking. Thus, a comprehensive process of risk management in all financial institutions should include all the components which cover the establishment for proper environment of risk management, searching for the right mitigation tools for different types of risks, measuring risk and proper internal monitoring and control (Khan & Ahmed, 2001).

In relation to modern banking, risk management is about the sentiments towards risk and pay off connected to it and strategies in dealing with them. As an operational issue, risk management is about the identification and classification of banking risks, methods and procedures to measure, monitor and control them (Angelopoulos and Murdougoutas, 2001). In contrast to conventional banks, Islamic banks face greater difficulties in managing risks due to greater complexities arising from the nature of specific risks and the profit-loss sharing concept of Islamic financing (Sundarajan and Errico, 2002) as well as Islamic contracts such as *mudharabah*, *musharakah*, *murabahah*, *salam* and *istisna*.

## 2.3 Concept of Risk Management in Islam

### ➤ Text in Al-Quran

وَقَالَ يَبْنَى لَا تَدْخُلُوا مِنْ بَابٍ وَاحِدٍ وَأَدْخُلُوا مِنْ أَبْوَابٍ  
مُتَفَرِّقَةٍ وَمَا أُغْنِي عَنْكُمْ مِنَ اللَّهِ مِنْ شَيْءٍ إِنْ الْحُكْمُ  
إِلَّا لِلَّهِ عَلَيْهِ تَوَكَّلْتُ وَعَلَيْهِ فَلْيَتَوَكَّلِ الْمُتَوَكِّلُونَ ﴿٦٧﴾

“O my children, do not enter the capital of Egypt by one gate but go into it by different gates. However, know it well that I cannot ward off you Allah’s will for none other than He has nay authority whatsoever. In Him I have put my trust and all who want to rely upon anyone should put their trust in Him alone.”

(Surah Yusuf: Verse 67)

Hadith from Prophet Muhammad SAW :

Rasullallah SAW saw a Bedoin left his camel untied. He then asked the Bedouin “Why did you left your camel untie?” The Bedouin answered, “Because I always put my trust in God”. Rasullallah SAW replied, “You should tie your camel first before you put your trust in God” ( narrated by at-Tirmidhi).

Based on Surah Yusuf and the hadith at-Tirmidhi, Allah SWT has provided guidance to risk management; firstly to mitigate the risk by diversification and secondly, to protect our wealth is by taking necessary precautions against any eventual loss. These are inconsistent with risk management principles of diversification, precautions, monitoring and control as outlined in the risk management process.

Apparently, the guideline of credit risk in Islamic financial institution is drawn by the risk management principles of Islamic Financial Services Board (IFSB, 2005). Credit risk was defined as the



possibility of counter party failure in meeting their obligations in an agreed terms to settle their payments accordingly. Credit risk is by far the most significant risk faced by banks and the performance, survival and the sustainability of their business depends on accurate measurement and sound effective management.

A default of an investor to an according terms of a loan or other way of credit is known as credit risk (Basel and Accord, 2006). The failure to repay the loan amount on time will cause potential loss to a commercial bank.

Maintaining a credit risk exposure within the acceptable parameters to maximise a bank's risk-adjusted rate of return is the goal of credit risk management. It is also a comprehensive approach to risk management and essential to the long-term success of any banking organisation.

Tafri, Rahman and Omar (2011) concluded that there is no convergence in the use of risk management tools between Islamic and conventional banks, probably due to the different nature of the banks and lack of tools which is interest-free based and *Shariah* compliant. This shows that more innovations and product developments are needed for Islamic banking in managing risk.

Ahmad and Ariff (2007), make comparisons between emerging economies and developed countries. Their findings shows that economies play some role to impact banking system, with

reference to the differences on variables impact to Islamic and conventional banks in the same country.

Similar variables however were found in Islamic banks. Ahmed and Nizam (2004), states that Natural Log of Total Assets were related to credit risk. Ahmed and Nizam 2004's study examine some variables impact on credit risk of both banking system in Malaysia, and they present similarities and differences. They find some of expected results differ between conventional banks and Islamic banks in the same country.

#### **2.4 Concepts of Credit Risk in Islamic Banking**

Uncertainty which is referred to as *gharar* in Islamic literature covers the concept of risk. The degree of risk varies according to its exposure. According to Knight (1921), in measuring probabilities and the occurrence of undesirable outcome is referred as risk, and certainty measures probabilities, which are both possible and impossible, or beneficial and not beneficial. However risk still can be measured, but it has less importance and in the event the uncertainty is not measureable (Hammad, 2008).

Risk management in Islamic banking is slightly different from that of conventional banking. However some specific features of Islamic contracts are found having risks that are unique to Islamic banking sector and related to the *shariah* compliance and different products and services that Islamic banks offer (Said et al.2000).

There are many factors that results in credit risk, which includes the concentrations of credit for individuals and sector, non-diversification in the credit portfolio and weakness of the process of credit analysis (Kaaya and Pastory, 2013). These factors represent the internal factors which are within the control of banks. On the other hand, credit risk can happen due to financial crisis or in economic downturn (Kozarevic, Nuhanovic and Nurikic, 2013).

Credit risk which arises due to non-payments by borrowers of their contractual obligations in an agreed terms could lead to bank facing liquidity risk on the reduction in income affects the case of the banks and their ability to meet immediate obligations.

Credit risk is inter-related to other types of risks. The inter-related nature of the credit risk to other types of risks of Islamic banks makes it imperative for Islamic banks to assess and the manage the variables affecting the credit risk.

## **2.5 Theory and Practice in Islamic Banking**

Usury is not only been banned by Islam, but also by the Jews and other religion. During historical era, the church prohibits the practice of giving and taking usury. Thus the rationale lies in Islamic Banking and Finance where Islamic law prohibits receiving and paying a predetermined fixed interest on borrowing as it promotes all financial transactions should be based on equity participation and profit and loss sharing (PLS) basis.

The existence of Islamic banking practices are creative methods of adopting Islamic principles to financial transactions for enhancing social welfare in Muslims societies. To some scholars, they agreed that equity is the most important issue in Islamic law, rather than issue of efficiency and growth at times (el-Gamal 1997, 2008).

Based on the Islamic banking practices we could see that the number of bankruptcy had been declined due to the nature of risk-sharing in equity investment and the participatory risk relationship of that financial institution also may not exposed to conservative credit risk. The social welfare could be brought higher with integrated ethics and values. According to Apps (2008), most investors reportedly consider the practise of Islamic banking and finance transaction gives them more reliable entity rather than conventional financing, referring to current global credit crisis and fears of economic recession.

Yusof and Bahlous (2013) states that Islamic banking contributes to economic growth in both the long run and short run. However in the short run, Islamic banking contributes more to economic growth in Malaysia.

According to Syed Nazamuddin, Makiyan (2008) risk management in Islamic management still ineffective enough to deal with the major challenges of financial risk, and it requires many cases to be studied. It is better to access innovative and appropriate solutions to blend in with the attributes of Islamic financial contract.

Makiyan (2008) also indicates that Islamic banks is more riskier and less profitable than conventional banks if there are money markets or underdeveloped. This risk come along with benefits limitation that facilitates by central bank, and also limited market infrastructure and lack of legal framework which can raise the operational risk of the Islamic banks.

While the number of institutions offering Islamic banking products is increasing, consumers and participators start paying a high concern to *shariah* consistency. According to Iqbal and Molyneux (2011), *Shariah* boards of different banks could issue different rulings on similar practices. This is allowable as far as it in accordance with the current practices of *Shariah* based. Besides the Asian Financial Crisis of 1997–1998, Islamic banking in Malaysia continue to grow rapidly, with number of assets increasing by 76.5 percent in 1997, according to BNM's annual report (Khiyar 2005). This expansion raised further concerns regarding the possibility of multiple or conflicting *shariah* interpretations. Consumers start pressing on the *shariah* compliant transaction. The state's effort to act as a mediator rather than negotiator in Islamic finance is another evident in its existence that the Islamic sector strongly compete with the conventional sector in offering the good transaction practises. Indeed, the Malaysian state held firm to the core principle that Islamic banks should be able to proof their competitiveness when it initially commenced the national Islamic banking system in the early 1980s (El-Din and Abdullah, 2007). Whereas Iran, Pakistan, and the Sudan

attempted the wholesale transformation of their national banking systems from conventional interest-based to Islamic *riba*-free finance, the more measured “dual banking system” model meant that the newly established Islamic system would operate alongside the conventional banking system inherited from the British. The dual banking system model offered the opportunity to maintain order in the conventional system, while simultaneously incubating the embryonic Islamic system. The rhetoric of competition, however, persists among many proponents of Islamic finance.

Mohamad Razif Abdul Kadir, the former deputy governor for Islamic Finance in BNM, proclaimed that the Islamic finance community should pooled more efforts, time and resources to compete with larger conventional finance market (Razif Abdul Kadir, 2010). Thus, even as the state incubated its own Islamic financial system, it also ensured that the system could actually operate without state financial guarantees. Boosting the Islamic sector to compete more with the conventional sector is a major example of how the state sought to indirectly promote the growth of this industry, rather than invest in resources, as it might have done in the previous developmental paradigm.

## **2.6 Malaysia and the Globalization of Islamic Banking Knowledge**

Malaysia has set the recognized limits of Islamic financial knowledge as field for remediation, and planners wanted key institutions for the production of Islamic financial knowledge to be located in Malaysia. After a tremendous lobbying effort in 2002 by former Prime Minister, Tun Mahathir Mohamad, the Organization of the Islamic Conference (OIC) awarded Kuala Lumpur as the headquarters of the Islamic Finance Services Board (IFSB).

The state make concrete its position as the most important Islamic finance centre through the production of Islamic financial knowledge when the BNM spent RM 200 million to provide critical research and educational institutions to signifies what has been termed as “knowledge gap” in Islamic finance. This expenditure was separated to two main bodies, namely the International Centre for Education in Islamic Finance (INCEIF) and the International Shariah Research Academy (ISRA). These two institutions become pioneer to all public in providing information about Islamic finance.

In those days there were lack of Islamic finance expertise. They had long experience the absence of deficient Islamic financial training of potential employees and the lack of Islamic educational programs to train such professionals. Generally, most employees in the industry were conventional bankers recruited into Islamic financial institutions. Critics alleged that such hiring practices threatened the integrity of Islamic banking, because such transplants could not

recognize the particularities of Islamic finance and were not conform to *shariah* matters. Inevitably, the recruiting of conventional bankers into Islamic financial institutions failed to meet its objectives as those worker have inadequate information about Islamic finance.

This matter has become worse, as the former deputy governor for Islamic Finance at the BNM states that if thorough review been conducted, we could see that Islamic finance in our country has been based on imitation rather than innovation, alongside the products and services is not *shariah*-based. The bankers currently are converts, they were shifted from conventional bankers transforming into Islamic bankers. This has cause confusion, with the stress on *shariah* compliance and *shariah*-based, as their mind-sets are obviously conventional. Some expert suggests that banks would employ *shariah* scholars as their bankers. [ISRA Bulletin 2009:2]

Referring to such criticisms, in 2006 the BNM founded INCEIF and designated as “global university” for education in Islamic finance. It occupies a well-appointed new campus adjacent to the University of Malaya, and offers graduate degrees in fields related to Islamic finance. Here the university polish and cultivate the human resources necessary to fulfil the absence of professionals expertise in both *shariah* and finance to staff Islamic financial institutions around the world. Another effect of this initiative is to extend the influence of what experts call the “Malaysian model” by making it the standard template for Islamic financial structures and contracts (Asyraf Wajdi, 2006).



Malaysia has established the comprehensiveness of the Islamic financial system by mutually reinforcing main components of current financial system comprising the Islamic banking, *takaful* and Islamic money markets. The well-developed legal, regulatory and *Shariah* frameworks in the Islamic financial infrastructure is also main competitive advantage for Malaysia, placing it forefront of other financial centres offering Islamic financial services and products to whole (BNM website, 2014).

## **CHAPTER THREE**

### **DATA AND METHODOLOGY**

#### **3.0 Introduction**

This chapter explain about data, research designs and conceptual framework, as well as method of analysis to be used in this study. The research questions that guide the study are restated as follows: What is the level of credit risk experienced by each local Islamic banks in Malaysia over the 2008 to 2013 period? To what extend the external factors (GDP, BFR and CPI), bank financing contracts (BBA, MURABAHAH, AITAB, OTHER CONTRACT) and other bank variables (TOTAL ASSETS, PROFIT MARGIN) correlate with each other? How are the external factors (GDP, BFR and CPI) bank financing contract diversified (BBA, MURABAHAH, AITAB, OTHER CONTRACT) as well as bank variables (TOTAL ASSETS, PROFIT MARGIN) influence credit risk of Islamic banks?

The operational definition of the data and hypothesis development are included.

### 3.1 Data

The secondary data of the six Islamic banks were converted into financial ratios which were obtained from the financial statements for each bank, and each year for six years, from 2008 to 2013. 2008 was chosen because most selected Islamic banks starts to offer Islamic finance product at this year. No primary data involved in this study. The financial ratios represent the variables to be used in the framework of the study.

Figure 4: List of Islamic Banks in Malaysia as at 2013

No	Bank	Total Assets (RM'000)
1	Bank Islam Malaysia Berhad (BIMB)	49, 674, 555
2	Bank Muamalat Malaysia Berhad (BMMB)	21, 071, 590
3	Maybank Islamic	125, 056, 697
4	Affin Islamic Bank	12, 330, 754
5	Hong Leong Islamic Bank	21, 728, 546
6	RHB Islamic Bank	29, 131, 089

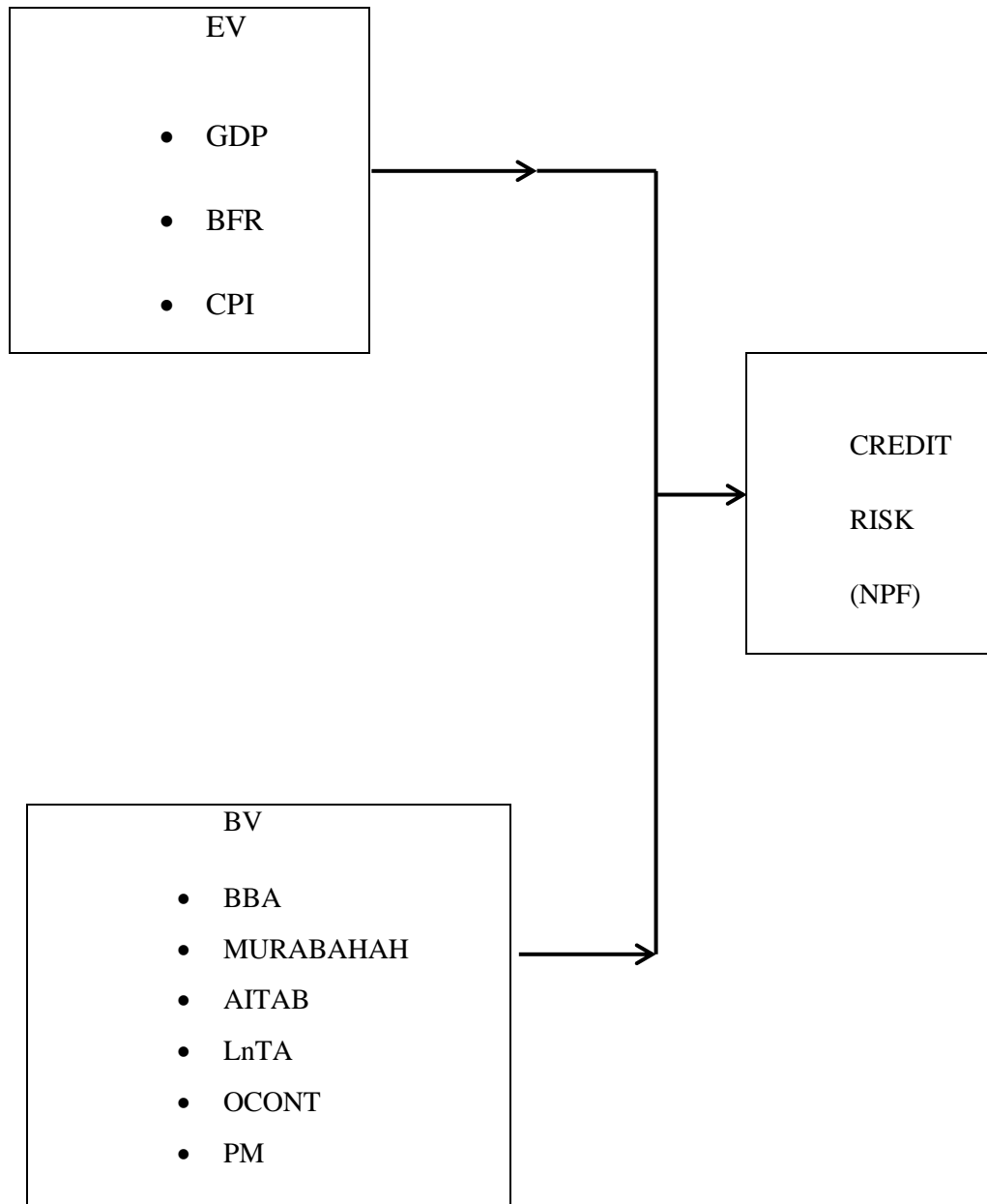
Source: Annual Report of Selected Banks

These six banks were chosen based on locality and the availability of Islamic finance practises. Maybank Islamic is the most chosen Islamic-banks among Malaysian because the total assets number is very large in that particular year. The least is Affin Islamic bank. It could be the service they offers failed to attract the number of customers.

### 3.2 Conceptual Framework

**Independent Variable**

**Dependent Variable**



### 3.3 Operational Definition

#### Dependant Variables (DV)

Credit risk is a dependent variable and is measured by Non-Performing Financing (NPF) as a proxy (Ahmed and Nizam, 2004). Definition of NPF in this study follows previous studies and is measured as in this equation :

$$\text{Credit Risk} = \frac{\text{Total Impaired Financing}}{\text{Total Financing}}$$

The loan in Islamic banks is formed as financing or funding to individual and institutions. Hence, the impairment means doubtful debts generated from funding and the debtors, be it individuals or institutions who face difficulty in making repayment at an agreed time.

#### Independent Variables (IV)

The independent variables are all financing contract in relation to the total financing for each bank. The independent variables consists of economic variables and bank variables. These IVs will be calculated as follows :

##### Economic Variables

GDP : percentage of growth in Gross Domestic Product

BFR : Base Financing Rate in percentage

CPI : Consumer Price Index in percentage

Bank Variables

BBA : Financing by BBA Contract

Total Financing

AITAB : Financing by AITAB Contract

Total Financing

Murabahah : Financing by Murabahah Contract

Total Financing

Other Contract : Financing by other contract

Total Financing

Profit Margin : Profit Before Zakat and Tax

Income Derived To Depositors

LntA : Natural Logarithm of Ringgit Amount of Total Asset

Total Asset

### 3.4 Hypotheses Development

BBA is a contract sale of deferred payment and instalment basis within an agreed payment period. If a borrower defaults in his instalment, this would lead to credit risk. If a borrower pays his instalment on time, credit risk is lower. Hence, hypothesis between BBA and credit risk is stated as;

**H<sub>a1</sub>** : There is a positive relationship between BBA and Credit Risk.

**H<sub>o1</sub>** : There is a negative relationship between BBA and Credit Risk.

*Murabahah* contract is where a sale with mark-up cost is disclosed to the buyer. According to Ratansari and Rayando (2012), Islamic banks are entitled to earn higher profitability form *murabahah* contract due to the degree of risks in their investment projects. However, Khan and Ahmad (2001) revealed that credit risks will arise if the counterparty failed to pay the debts in full and on time. Thus, the higher levels of *murabahah* will create higher degree of credit risks. Hence, this argument formulate the hypothesis that;

**H<sub>a2</sub>** : There is a positive relationship between *Murabahah* and Credit Risk.

**H<sub>o2</sub>** : There is a negative relationship between *Murabahah* and Credit Risk.

AITAB is an innovative financing contract that is specifically designed for Islamic hire-purchase facilities. There is a possibility that the lessee may default in paying the rental of *ijarah* asset. If this situation persistently occurs, the financier (the bank) will suffer losses leading to credit risk. Thus, the hypothesis is;

**H<sub>a3</sub>** : There is a positive relationship between AITAB and Credit Risk.

**H<sub>o3</sub>** : There is a negative relationship between AITAB and Credit Risk.

At present, Islamic banks carry huge debts and faced higher risks compared to conventional banks due to many counterparties interaction involved in Islamic financing contracts. Some of this risk are generated because the methods used in the dealing do not conform to *shariah* ruling (Elgari, 2003). As such, the hypothesis related to other contracts and credit risk is as follows;

**H<sub>a4</sub>** : There is a positive relationship between Other Contract and Credit Risk.

**H<sub>o4</sub>** : There is a negative relationship between Other Contract and Credit Risk.



It is expected that credit risk have a negative relationship with total earning assets. Higher efficiency in managing earning assets would decrease higher credit risk, as smaller capitalized bank tend to have lower capacity to absorb losses (Ahmad and Ahmad, 2003). The hypothesis is;

**H<sub>a5</sub>** : There is a positive relationship between Total Asset and Credit Risk.

**H<sub>o5</sub>** : There is a negative relationship between Total Asset and Credit Risk.

Credit risk is the most prominent risk that affects banks' performance since the core activities of financial institution is providing loan to customers. Thus, the greater is the exposure of banks to credit risk, the lower will be the bank's profitability (Rashidah et al, 2011). Hence, the hypothesis is as follows;

**H<sub>a6</sub>** : There is a positive relationship between Profit Margin and Credit Risk.

**H<sub>o6</sub>** : There is a negative relationship between Profit Margin and Credit Risk.

High level of inflation increases cost of money and interest rate. When interest rate or financing cost increases, many companies default in meeting up their credit payment. When the situation occurs, it will leads to an increase of non-performing financing for banks. Hence, it is assumed that an increase in CPI (inflation) causes an increase in credit risk. The hypothesis is thus stated as follows;

**H<sub>a7</sub>** : There is a positive relationship between CPI and Credit Risk.

**H<sub>o7</sub>** : There is a negative relationship between CPI and Credit Risk.

BFR is a profit rate that takes into account the institution's cost of funds and other administrative costs. BFR is very sensitive to the cost of credit. When BFR arises, the financing amount also arises, making customers find it difficult to pay financing repayment on time, hence, default rate occurs resulting in high credit risk. The hypothesis goes as follows;

**H<sub>a8</sub>** : There is a positive relationship between BFR and Credit Risk.

**H<sub>o8</sub>** : There is a negative relationship between BFR and Credit Risk.

GDP is one of the important factors that influenced the economy and national productivity. In recession period or lower economic growth, many companies face difficulties to produce and sell their goods due to lower demand. This affects sales and profitability. With lower profit, companies face problem to pay their bank financing causing the banks to incur high credit risk. In improving economy, that is higher GDP growth, individual and institutions make more sales and higher profit thus they are able to make payment. Therefore, the NPF and credit risk tend to be lower (al-Smadi, 2010). The hypothesis is :

**H<sub>a9</sub>** : There is a positive relationship between GDP and Credit Risk.

**H<sub>o9</sub>** : There is a negative relationship between GDP and Credit Risk.

## **CHAPTER FOUR**

### **ANALYSIS OF FINDINGS**

#### **4.0 Introduction**

This chapter explains about the findings of the study, after completing the whole procedures of data collection and analysis. Discussed here is the final results of the regression analysis of the factors which determine credit risk of local Islamic banks. Included in this chapter is the descriptive analysis as well as the correlation analysis of the credit risk determinants of the Malaysian Islamic Banks.

Some charts are also presented in this chapter to illustrate the trend in some bank specific factors normally credit risk level, profit margin, BBA financing of each Islamic bank under studied. The operational definition also included to elaborate the variables in details.

#### 4.1 Operational Definition

Variables	Definition	Formula
Credit Risk	Credit Risk or problem default	Non-Performing Financing / Total Financing
Bai' BitthamanAjil (BBA)	Financing contract using deferred sale method	BBA Amount in the year (RM) / Total Financing (RM)
Murabahah	Financing contract of mark-up cost	Murabahah Amount in the year / Total Financing
Al-IjarahThumma al-Bai (AITAB)	Financing contract using lease and purchased method	AITAB Amount in the year / Total Financing
Total Assets	RM Value of total assets	Natural Logarithm of Total Assets in Value Terms
Gross Domestic Product (GDP)		Percentage of growth in gross domestic product
Base Financing Rate (BFR)	Base Islamic Rate of Financing	Value of BFR in that particular year
Consumer Price Indicator (CPI)	Measurement of inflation	Value of CPI in that particular year

Nine variables were tested in this study to examine what factor give the most impact to credit risk in a bank. The period of 2008-2013 were selected to help demonstrate the relationship between the variables in different levels of economic performance in local Islamic banks.

## 4.2 Findings

Objective 1: Credit Risk Level of Malaysian Banks

Table 1: Descriptive Statistics

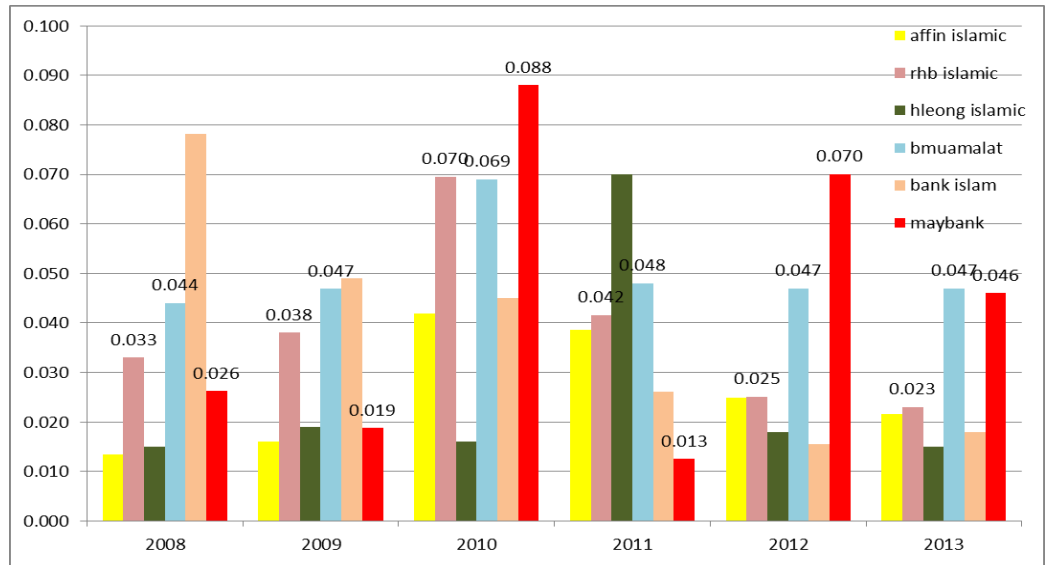
	Mean	Std. Deviation	N
CREDIT RISK	.036347	.0216609	36
BAI BITHAMAN AJIL	.386772	.1522337	36
MURABAHAH	.167347	.2093357	36
IJARAH THUMMA AL BAI	.302944	.2265114	36
BITAMLIK			
OTHER CONTRACT	.102940	.1383506	36
PROFIT MARGIN	.241197	.1189266	36
TOTAL ASSET	16.348515	2.8966547	36
GROSS DOMESTIC			
PRODUCT	.04350	.028074	36
BASE FINDING RATE	.063700	.0038356	36
CONSUMER PRICE INDEX	.01517	.015195	36

Table 1 shows the descriptive statistics of the variables used in the study. Six local Malaysian Islamic banks were analysed. The mean credit risk level of the six banks is 0.037 or 3.7% over study period between 2008 to 2013. And the standard deviation is 0.022. The small standard deviation reflects no major differences between the credit risk of the banks during the study period. *Bai' Bithaman Ajil* (BBA) has a mean of 0.387 or 38.7% with the standard deviation of 0.152. BBA is the largest Islamic financing contract offered to the customer.

The statistic shows that the six Islamic banks, on average has 38.68% total of its financing in BBA contracts. The standard deviation among the financing contracts indicates no major variation among the banks in terms of their diversification by financing contract. *Murabahah* has means of 0.167 or 16.7% and standard deviation of 0.209. *Murabahah* is the least offered to customers compared to other three main Islamic financing contracts. AITAB with mean of 0.303 or 30.3 % and standard deviation of 0.227. Other contract like *tawarruq*, *bai' ad-dayn*, *istisna* also contribute to the credit risk with small figures 0.103 or 10.3 %. Profit margin is 0.241 or 24.1%. This shows that local Islamic banks achieved 24.1% profit margin from their banking operations.

The significant relationship of total assets with mean of 16.35 means that the higher the amount of total assets, the lower is the credit risk. Over the 2008-2013 period, Malaysia recorded an average economic growth of 4.3%. This was due to a certain extent that the Malaysian economy was affected by the global financial crisis in 2008. The inflation was relatively low at 1.5 %.

Figure 5: Credit Risk Level by Bank



Source: Annual Report of Selected Banks (2008-2013)

Overall, all the six Malaysian Islamic banks recorded lower credit risk in 2013 as shown in figure 5. In 2010, Maybank Islamic record the highest credit risk with 8.8 percent and the figure is the highest over the period of this study.

All banks credit risk describe to record an average credit risk level of 0.028 in 2013.

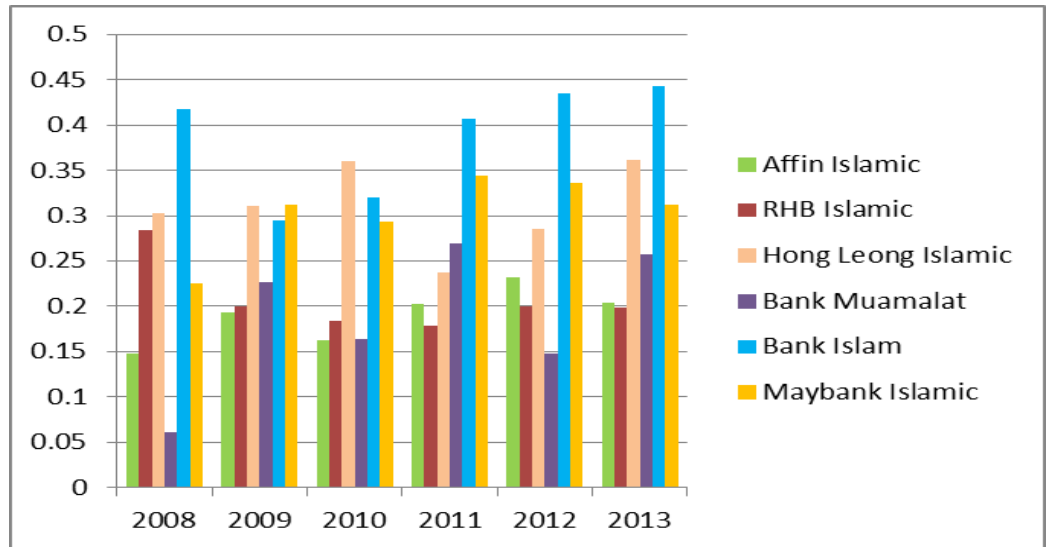
Table 2: Credit Risk by Banks

Bank	2008	2009	2010	2011	2012	2013	Average
Affin Islamic	0.0134	0.0160	0.0419	0.0386	0.0249	0.0215	0.0261
RHB Islamic	0.0330	0.0380	0.0695	0.0416	0.0251	0.0230	0.0384
Hong Leong Islamic	0.0150	0.0190	0.0160	0.0700	0.0180	0.0150	0.0255
Bank Muamalat	0.0440	0.0469	0.0690	0.0480	0.0470	0.0470	0.0503
Bank Islam	0.0782	0.0490	0.0450	0.0261	0.0155	0.0180	0.0386
Maybank Islamic	0.0262	0.0188	0.0880	0.0125	0.0700	0.0460	0.0436
Average	0.03497	0.0313	0.0549	0.2368	0.0334	0.0284	

Source: Annual Report of Selected Banks (2008-2013)



Figure 6: Profit Margin of Islamic Banks



Source: Annual Report of Selected Banks (2008-2013)

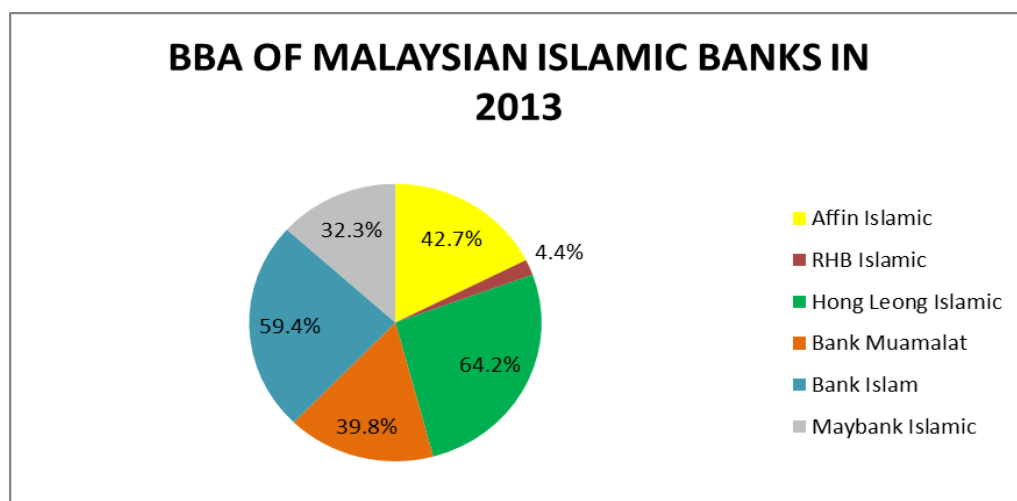
Bank Islam has the highest profit margin towards the period of study, from 2008 to 2013 which is 44.20 % as shown in Figure 6 and Table 3. This means that Bank Islam is the most profitable compared to other Malaysian Islamic banks in terms of profit margin. However, this is at gross level, but does suggest that Bank Islam has a better control of its costs than its rival.

Table 3: Profit Margin of Islamic Bank

Bank	2008	2009	2010	2011	2012	2013	Average
Affin Islamic	0.148467	0.193751	0.161937	0.202987	0.231355	0.203714	0.190368
RHB Islamic	0.283646	0.199377	0.183688	0.178383	0.199369	0.198278	0.207123
Hong Leong Islamic	0.302188	0.310558	0.36047	0.237311	0.285157	0.361686	0.309562
Bank Muamalat	0.061348	0.22619	0.164196	0.269396	0.148055	0.257442	0.187771
Bank Islam	0.417569	0.294058	0.320391	0.407198	0.434642	0.442628	0.386081
Maybank Islamic	0.224799	0.311761	0.29269	0.343494	0.336449	0.312304	0.303583
Average	0.239669	0.255949	0.247229	0.273128	0.272505	0.296009	

Source: Annual Report of Selected Banks (2008-2013)

Figure 6: BBA Financing of Malaysian Islamic Banks in 2013



Source: Annual Report of Selected Banks (2008-2013)

Further analysis of BBA in 2013 shows that Hong Leong Islamic has the largest financing exposure BBA financing compared to other five banks. Constituting about 64.2 % of its financing portfolio, this means that Hong Leong Islamic try to pool customers through its Islamic home financing. Bank Islam maintains a lower portion of BBA financing of 59.4% compared to Hong Leong Islamic Bank. RHB Islamic provided the least financing with 4.4 % of its total financing.

Table 4 : BBA Financing of Malaysian Islamic Banks in 2013

Bank	2008	2009	2010	2011	2012	2013	Average
Affin Islamic	46.7%	46.7%	53.0%	51.0%	30.9%	42.7%	45.2%
RHB Islamic	4.4%	32.4%	18.8%	10.8%	6.6%	4.4%	12.9%
Hong Leong Islamic	34.3%	40.9%	45.9%	55.3%	62.8%	64.2%	50.5%
Bank Muamalat	32.3%	34.8%	31.2%	32.9%	41.8%	39.8%	35.5%
Bank Islam	52.7%	53.4%	50.5%	50.1%	43.7%	59.4%	51.6%
Maybank Islamic	33.0%	35.6%	39.7%	39.7%	37.9%	32.3%	36.4%
Average	33.9%	40.6%	39.8%	40.0%	37.3%	40.5%	

Source: Annual Report of Selected Banks (2008-2013)



Table 5 presents the correlation matrix of the variables in the research model comprising of credit risk as dependant variables and GDP, BFR, and CPI as independent variables. The correlations indicate a statistically significant correlation between bank variable and each of the explanatory variables. The correlations between bank variable and variables of macroeconomic factors have a positive sign. However there are negative relationship between some measures. Credit risk is negatively correlated to *Bai bithaman Ajil* (BBA) and *al-Ijarah Thumma al-Bai* (AITAB) with coefficient estimates at -0.043 and -0.023 respectively. However, *Murabahah* is positively correlated to credit risk suggesting as inverse relationship. However, variables such as Profit Margin, Total Assets, GDP, BFR and CPI are positively correlated to credit risk.

As expected, the correlation between size of the bank and risk in business loans seems weak. Profitability of banks seems to be inversely related to the number of banks operating in each local banks and positively related to the standard concentration measures as well as market power indicators (CPI).

*Murabahah* has a strong correlation value with 0.084. Other contract, profit margin and total asset has correlation of 0.152, 0.027 and 0.328 respectively.

### Objective 3

Determinants – influence of bank factor and economic factors on credit risk.

Table 6 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.601 <sup>a</sup>	.361	.140	.0193177	.361	1.632	9	26	.158	2.232

This regression model summary in Table 6 shows R-square of 0.361 and adjusted R-square of 0.140. This shows that the variables collectively influenced 36.1 percent of changes in the credit risk. On the adjusted basis, the model explains 14.0 percent variation in the credit risk of Malaysian Islamic banks. Durbin-Watson statistic is 2.232 which mean that there is no signs of auto correlation between the residuals of the regression.

Table 7 : Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	90.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.078	0.122		0.639	0.529	-0.13	0.286		
	BAI BITHAMAN AJIL	0.008	0.026	0.06	0.316	0.755	-0.036	0.052	0.686	1.458
	MURABAHAH	0.004	0.029	0.028	0.125	0.902	-0.046	0.053	0.493	2.03
	AL-IJARAH THUMMA AL-BAI'	-0.012	0.018	-0.11	-0.65	0.522	-0.042	0.019	0.86	1.163
	OTHER CONTRACT	0.015	0.034	0.1	0.441	0.663	-0.043	0.073	0.482	2.073
	PROFIT MARGIN	-0.072	0.061	-0.325	-1.18	0.249	-0.176	0.032	0.323	3.095
	TOTAL ASSET	0.015	0.007	0.518	2.007	0.055	0.002	0.027	0.369	2.713
	GROSS DOMESTIC PRODUCT	0.565	0.215	0.761	2.631	0.014	0.199	0.931	0.294	3.403
	BASE FINANCING RATE	-4.738	1.994	-0.873	-2.376	0.025	-8.14	-1.337	0.182	5.488
	CONSUMER PRICE INDICATOR	0.37	0.356	0.27	1.039	0.308	-0.238	0.978	0.363	2.752

Table 7 shows that *Bai Bithaman Ajil* (BBA), *Murabahah* and other contract are not statistically significant to credit risk. Both BBA and *Murabahah* yield positive coefficient estimates. Although they are not significant, the positive sign of the coefficient suggests that an increase in the bank's exposure in BBA and *Murabahah* would increase credit risk.

This result is different with literature Khan and Ahmad (2001) and it depends on the demand of financing which seems greater in Islamic banks. The largest financing contract is expected to raise the financing amount and this increase leads to higher credit risk exposure.

There were cases of where size of the banks can impact negatively to credit risk, but when they deal with good investors then they would have ability to pay debt (Ahmed and Nizam, 2004).

In terms of total asset, the result for this regression shows that there is a significant but positive relationship between credit risk and total assets. Therefore, the null hypothesis of total assets is rejected.

In the table also we could see that there are no multicollinearity since variance inflation factor (VIF) statistics for the variables is less than 10 (Hair, et al).

When GDP increased, credit risk will also increase. During good economy, bankers provide financing, with KPI to have high loan growth. The more financing given without proper and good credit assessment the higher is the probability of defaults.

However, credit risk will increase if the BFR increased. The increase in BFR will impact the ability of the borrowers to pay their financing repayment because financing provided by Islamic banks are mostly fixed rate in nature. This characteristic of Islamic financing provides security and protection against fluctuations for the customers and banks.

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

#### 5.0 Introduction

This study investigates the factors which contribute to the credit risk in local Islamic banks in Malaysia. As we all know, Islamic banks operate on fully *shariah* compliance and aim at attracting investors and customers at large with the financing contract available. This is because the unique structure of investment on the liability side and financing on the asset side of an Islamic banking balance sheet structure.

#### 5.1 Summary of Islamic Banks

In an Islamic bank, the money provided by customers in the form of deposits is not loaned to the borrowers but is actually channelled into investment activities, with underlying assets, which will earn profit. The depositor is rewarded by a share in that profit, after a management fee is deducted by the bank. This profit and loss sharing basis is not found in conventional banks and Islamic banks operation is also based on certain prohibition and the core prohibition is *riba* that is the activity must be interest free.



In providing financing to their customers, Islamic banks after these financing facilities under Islamic contracts namely BBA, *Murabahah*, *Mudarabah*, *Tawarruq*, AITAB and so on. In doing so, Islamic banks face the risk of their customers not paying up their financing on time. This is the credit risk. Credit risk is the main risk faced by Islamic banks. Therefore, it is important to identify factors affecting credit risk or determinants of credit risk of Islamic bank.

### **5.1.1 Objective 1: Credit Risk Level**

Mean credit risk level of Islamic banks in Malaysia during the study period was 3.63%. The highest average credit risk was experienced by Bank Muamalat (5.53%) and the lowest average credit risk was recorded by Hong Leong Islamic (2.25%)

### **5.1.2 Objective 2: Correlation**

The factor which is strongly correlated to credit risk is total asset.

### **5.1.3 Objective3:Regression Result on Credit Risk Determinants**

The study finds that all 10 determinants comprising of six banks variables and 3 external variables explain 36.1% of credit risk of Malaysian local Islamic banks. The Islamic financing contracts do influence credit risk although not significant. The results confirm finding of Wae Ibraheem and Norhayati (2014) that BBA and *Murabahah* positively influence credit risk. The result suggests the higher the exposure of these financing contracts, the higher is the

probability of credit risk of Islamic banks. On the other hand, *Ijarah* appears to have negative effect on credit risk. Therefore, the results imply that Islamic banks should look at their diversification strategy in terms of BBA and *Murabahah* contracts. In order to mitigate credit risks, the Islamic banks should consider expanding their financing portfolio to *Ijarah*-based. If the financing of banks are more in BBA and *Murabahah*, the banks need to improve their risk management in order to manage the risks coming from these contracts.

Significant factors influencing credit risk of Malaysian local Islamic banks are total assets, GDP and base financing rate. All the three variables are positively influence the credit risk of Islamic banks, with GDP as the most significant determinant of credit risk. This result is consistent with Ahmad and Ariff (2003); Hameed and Ahmad (2012). The negative impact of base financing rate is a new finding. This is in contrast to Ahmad (2003) whose result is positive to credit risk.

## **5.2 Contribution**

This study contributes some additional knowledge on the impact of financing contracts on credit risk of Islamic banks. To the researcher's knowledge hardly any study done in the part that show regression effect between financing contract and credit risk besides the study done by Wae Ibraheem and Ahmad (2014).

Another contribution in the detailed analysis of credit risk by individual Islamic bank in Malaysia comprising of Maybank, BIMB, Hong Leong Islamic, Bank Muamalat Berhad, RHB Islamic Bank and Affin Islamic Bank . This information contribute to new researchers and students to know more about credit risk of local banks which previously not reported or published.

### **5.3 Policy Implication**

Islamic banks may react differently to market demand and changes due the concept of prohibitions of *riba* and free from speculation. They may have constraints in flexibility of their products offering when compared to conventional products offered by financial institutions. Therefore, Islamic banks should have specific policies different from conventional banks policies in managing the credit risk.

Moral hazard and principal-agent issues should be more pronounced between Islamic banks and organisations also to individuals to whom they lend the funds. This is because Islamic finance structure involve partnership agreements such as in *Musharakah* and *Murabahah*. The operation of Islamic banks and borrower will always exist. Therefore, the costs related to increase level of due diligence and negotiating are probably higher for Islamic banks. In this situation, Islamic banks should develop proper operating

manuals to ensure there exists full transparency of information between Islamic banks and investors.

It is also costly in establishing new financial products for Islamic banks because the products has to be conform with *Shariah* guidelines instead of normal financial regulations. Moreover, these financial products need to go through stages of compliance and complications before they were approved. To make it worst, these approval usually takes more time than expected. The pace of innovation of new Islamic financial products can be considered slower than the conventional products. This make the Islamic banks prone to disable to compete with conventional financial institutions and causes the activities narrow to smaller, niche markets. Hence, it is important for Islamic banking industry to have sufficient talents to join the industry. The government of Malaysia should develop educational program and incentives to promote Islamic finance education in universities and higher institution to produce more human capital in Islamic banking and Islamic capital market.

However, not all Islamic financial products is compatible with international financial regulation. For instance, Diminishing *Musharakah* may not be a competent mortgage instrument in law, although it could be constructed as such. The requirement to ensure that such products comply with regulations may need new legal infrastructure.

The open interpretation of *Shariah* rulings may allow certain Islamic finance products to be acceptable in some markets only and leading some Islamic scholars who are experts in *Shariah* and finance to criticise the number of product offerings. For example, the *Murabahah* contracts have been criticised because their repayments have been based on prevailing interest rates rather than on economic or profit conditions within which the asset will be used. The formation of SAC and SAB should continue to be implemented in the future in order to safeguard the Islamic banking products to be *Shariah* compliant and *Shariah* based.

#### **5.4 Recommendation for Further Research**

Based on this study, we may recommend that the financing contract should be expanded than just the four contracts which has been covered in this study. The study of Islamic financing contract is broad, thus with expansion of the unselected financing contracts it is expected to give more comprehensive results to be shown. We could also know which financing contract give the best impact to Islamic finance industry.

This study also suggest that banks should cover the foreign Islamic banks operating in Malaysia besides the local Islamic banks. Foreign Islamic banks also operating within the prescribed *shariah*-based and *shariah* compliance. Hence if we cover the foreign Islamic

banks we could see which bank, whether it is local or foreign is the most effective in applying the principles of Islamic banking in its transactions.

Future researcher is advised to use different statistical analysis using strata or e—views or structural equation modelling in conducting the similar study. The usage of different software and analysis techniques might yield new and different results. Hence we would get different gains and knowledge.

## **5.5 Conclusion**

This study tests internal and external variables which determines the credit risk in Islamic banks in Malaysia. The main findings of this study shows that five variables significantly determines credit risk of Islamic banks in Malaysia. They are *Murabahah* contract, Other Contract, AITAB, Consumer Price Indicator (CPI) and Base Financing Rate (BFR).

## REFERENCES

- Ahmad, N., & Abu Bakar, A. (2008). Risk Management Practises Of Islamic Banks In Malaysia.
- Ahmad, N., & Haron, S. (2002). Perceptions Of Malaysian Corporate Customers Towards Islamic Banking Products And Services. *International Journal Of Islamic Financial Services*, 3(4), 13-29.
- Ahmad, N., & Mohamed, A. (2013). Multi-Country Study Of Bank's Credit Risk Determinants. *International Journal Of Banking And Finance*, 5(1).
- Akkizidis, I., & Bouchereau, V. (2005). Guide To Optimal Operational Risk& Basel II, Chennai, India.
- Al-Smadi, M. O. M. (2010) Credit Risk, Macroeconomic and Bank Specific Factors in Jordanian Banks. PhD Thesis, Universiti Utara Malaysia.
- Ambah, F. (2008). Islamic Banking : Steady In Shaky Times - Principles Based On Religious, Chennai, India.
- Apps, P. (2008). Global Financial Centres Battle For Islamic Markets. *International Herald Tribune*.
- Archer, S., & Abdullah, H. (2008). Operational Risks Exposure Of Islamic Banks.
- Archer, S., & Karim, R. (2008). Islamic Finance : Regulatory Changes. *Wiley, Singapore*, 121-131.
- Azhar, S. (2005). Critical Issues On Islamic Banking And Financial Markets. *Islamic Economics, Banking And Finance, Investments, Takaful And Financial Planning*.
- Chapra, M. U. and Khan, T. (2000). Regulation and Supervision of Islamic Banks. Jeddah: IRTI
- Dahduli, M. S. (2009), Islamic Banking and the Credit Crunch. Jogjakarta Press
- Das, A. and Ghosh S. (2007). Determinants of Credit Risk in Indian State-Owned Banks: An *Empirical Investigation, Economic Issues*, Vol. 12, No. 2, Pp. 48-66, Manipal, India.
- Diamond. D. W. (1984). Financial Intermediation and Delegated Monitoring. *Review of Economic Studies*, 51, 393-414.
- El-Hawary, D., Grais, W., & Iqbal, Z. (2004). Regulating Islamic Financial Institutions : The Nature Of Regulated. *World Bank Policy Research*, 3227.

- El-Hawary, D., Grais, W., & Iqbal, Z. (2007). Diversity In The Regulation Of Islamic Finance Institutions. *The Quarterly Review Of Economics And Finance*, 46(5), 778- 800.
- Ernst & Young. (2011). A Brave New World Of Sustainable Growth. *World Islamic Banking Competitiveness Report*.
- Ernst & Young. (2012). Growing Beyond DNA Of Successful Transformation. *World Islamic Banking Competitiveness Report 2013*.
- Fiennes, T. (2007). Supervisory Implications Of Islamic Banking. *A Supervisor's Perspective*.
- Ghafar, A. (2010). Money. *Islamic Banks And The Real Economy*., Singapore Cengage Learning
- Hammad, H. A. (2009). Investment Risks in Islamic Banks. Islamic Development Bank – Islamic Institute for Research and Training.
- Hasan, M. and Dridi, J. (2010). The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study. IMF Working Paper, WP 10/201.
- Hassan, A. (2009). Risk Management Practices of Islamic Banks of Brunei Darussalam. *The Journal of Risk Finance*, 23-37.
- Iqbal, M., Ahmad A. and Khan T. (1998). Challenges Facing Islamic Banks. Jeddah: Islamic Research and Training Institute, Islamic Development Bank.
- Iqbal, Z. (2009). Impact of Global Financial Crisis on IDB Member Countries: The case of Gulf Cooperation Council and Sub-Saharan Africa. *The Pakistan Development Review*, 47:4 Part II (Winter 2008) Pp. 583-601
- Kahf, M. (2005). Basel II: Implications for Islamic Banking. Paper Presented at The 6<sup>th</sup> International Conference On Islamic Economics and Banking.
- Khan, M., & Bhatti, M. (2008). Development In Islamic Banking. *A Financial Risk Allocation Approach*, 9(1), 40-51.
- Laldin, A. (2008). The Islamic Financial System : The Malaysian Experience And The Way Forward. *Humanomics*, 24(3), 217-238.
- Knight, Frank (1921), Risk Uncertainty and Profits, New York: Harper & Row.
- Laabas, B. and Limam I. (2002). Are GCC Countries Ready For Currency Union? Arab Planning Institute, Kuwait.
- Makiyan, S. N. (2008). Risk Management and Challenges in Islamic Banks. *Journal of Islamic Economics, Banking and Finance* 4(3).
- Matthews, K. and Thompson J. *The Economics of Banking*. (2008) Chichester: Wiley, Chapter 2 and Chapter 9, Section 9.2.
- Nuxoll, D. (2003). The Contribution Of Economic Data To Bank Failure Models. *Federal Deposits Insurance Corporation*.



- Said et al. (2000). Draft Risk Management Guidelines for Islamic Banking Institutions state. Bank of Pakistan, Islamic Banking Department. [www.sbp.org.pk](http://www.sbp.org.pk)
- Sundarajan, V. (2005). Risk Measurement And Disclosure In Islamic Finance And The Implications Of Profit Sharing Investment Accounts. *Proceedings Of The 6th International Conference On Islamic Economics And Finance*.
- Tafri, F., Rahman, R., & Omar, N. (2011). Empirical Evidence On The Risk Management Tools Practised In Islamic And Conventional Banks. *Qualitative Research In Financial Markets*, 3(2), 86-104