



THE DETERMINANTS AND THE IMPACT OF BANK
REGULATIONS AND SUPERVISION ON THE EFFICIENCY
OF ISLAMIC BANKS

BY

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ABSTRACT

This study sheds light the analysis of bank efficiency of 108 Islamic banks operating in 26 countries across MENA, ASIA and other regions from year 2004 to 2010. The two-stage approach is employed for this study. In the first stage, the non-parametric Data Envelopment Analysis (DEA) method is used to measure the technical efficiency scores of the Islamic banks. The second stage analysis is Multivariate Regression analysis where the unbalanced panel data regression model is employed to regress the efficiency scores on bank-specific, macroeconomics and bank regulations and supervision factors which could influence the efficiency levels of the Islamic banks. The empirical findings from the first stage bring forth the high degree of inefficiency of Islamic banks and suggest that the Islamic banking sector has been relatively managerially efficient in controlling their operating costs but have been operating at a relatively non-optimal scale of operations. In the second stage analysis, the findings have a very significant implications for the management of Islamic banks which helping the bank managers to apply strategies to raise the efficiency because the efficiency measures lead to knowledge about any disadvantages of the operation within the banks. The empirical findings from the second stage also has provide evidence on the impact of regulations and supervision on Islamic banks' efficiency where the findings suggest that in Asia and high-income countries, the stricter the supervisory power, the tighter the restrictions on non-banking activities and the stricter the private monitoring could enhance the level of efficiency of Islamic banks. Meanwhile, in MENA and middle-income countries, the stricter the capital requirement could decrease the level of efficiency of Islamic banks. The findings highlight the challenges and issues pertaining the existing regulations and the implications of Basel II framework towards the efficiency of Islamic banks and its importance in formulating the appropriate strategies in the aspects of policies of Islamic banking regulations and supervision.

ملخص البحث

تلقي هذه الدراسة الضوء على تحليل الكفاءة المصرفية لـ ١٠٨ مصرفاً إسلامياً تعمل في ٢٦ دولة في منطقة الشرق الأوسط وشمال أفريقيا وآسيا وغيرها من المناطق من عام ٢٠٠٤ إلى ٢٠١٠م. لقد تمّ استخدام منهج مكون من مرحلتين في هذه الدراسة. في المرحلة الأولى، تمّ استخدام طريقة تحليل البيانات غير البارامترية (DEA) لقياس درجات الكفاءة الفنية للمصارف الإسلامية. تحليل المرحلة الثانية هو تحليل انحدار متعدد المتغيرات حيث تمّ استخدام نموذج انحدار لجدول البيانات غير المتوازنة لتقليص درجات الكفاءة في الأنظمة البنكية الخاصة، والاقتصاد الكلي، وأنظمة البنوك وعوامل الإشراف التي يمكن أن تؤثر على مستويات الكفاءة للمصارف الإسلامية. وتكشف النتائج التجريبية من المرحلة الأولى عن درجة عالية من عدم كفاءة البنوك الإسلامية، وتشير إلى أن القطاع المصرفي الإسلامي كان فعالاً نسبياً في الإدارة في التحكم في تكاليف التشغيل الخاصة به، ولكنه كان يعمل في نطاق عمليات غير مثالية نسبياً. في تحليل المرحلة الثانية، كان للنتائج تأثير هام للغاية على إدارة البنوك الإسلامية التي يمكن أن تساعد مديري البنوك على تطبيق استراتيجيات لزيادة الكفاءة لأن قياس الكفاءة يمكن أن تُظهر أي عيوب في العملية داخل البنوك. توفر النتائج التجريبية من المرحلة الثانية دليلاً على تأثير اللوائح والإشراف على كفاءة البنوك الإسلامية حيث تشير النتائج إلى أنه في آسيا والبلدان ذات الدخل المرتفع، السلطة الإشرافية الأكثر صرامة، وتشديد القيود على الأنشطة غير المصرفية والمراقبة السرية الصارمة يمكن أن يعزز مستوى كفاءة البنوك الإسلامية. في الوقت نفسه، في منطقة الشرق الأوسط وشمال أفريقيا والبلدان المتوسطة الدخل، قد يؤدي تشديد متطلبات رأس المال إلى خفض مستوى كفاءة البنوك الإسلامية. وتسلط النتائج الضوء على التحديات والقضايا المتعلقة بالأنظمة الحالية وانعكاسات نظام Basel II على كفاءة البنوك الإسلامية، وهو مهم في صياغة الاستراتيجيات المناسبة في جوانب سياسات الأنظمة المصرفية والإشراف الإسلامي.

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DECLARATION

I hereby declare that this thesis is the result of my own investigations except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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TABLE OF CONTENTS

Abstract	ii
Abstract in Arabic	iii
Approval Page.....	iv
Declaration	v
Copyright Page.....	vi
Acknowledgement	vii
List of Tables	xii
List of Figures	xiv
Acronyms and Abbreviations	xv
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Overview of Islamic Banking.....	3
1.3 Islamic Banking and Conventional Banking Compared	5
1.4 Technical Efficiency as an Efficiency Measurement	7
1.5 Studies on Efficiency of Islamic Banks.....	8
1.6 Scope of the Research.....	9
1.6.1 First-Stage Analysis: Technical Efficiency (DEA) and Univariate Analysis	10
1.6.2 Second-Stage Analysis: Determinants of Efficiency: Multivariate Regression Analysis.....	11
1.7 Regulatory Framework of the Basel Committee on Banking Supervision (BCBS)	13
1.8 Islamic Banking and Basel II.....	15
1.9 Regulatory Framework of Islamic Banking Sector	17
1.10 Problem Statement.....	20
1.11 Objectives of the Study.....	26
1.12 Research Questions.....	26
1.13 Significance of the Study.....	27
1.14 Organization of the Thesis	28
CHAPTER TWO: THEORETICAL FRAMEWORK	31
2.1 Introduction.....	31
2.2 Theory of Efficiency	31
2.3 Production Frontier Approach	34
2.4 Agency Theory	37
2.5 Public Interest Theory.....	38
2.6 Private Interest Theory.....	39
2.7 Basel II Capital Accord.....	40
2.8 Conclusion	42
CHAPTER THREE: LITERATURE REVIEW.....	43
3.1 Introduction	43
3.2 Literature Review of Bank Efficiency	43
3.3 Studies on Efficiency of Islamic Banks	46

3.4	Studies on Bank Regulations and Supervision	47
3.5	Frontier Efficiency Measurement Techniques.....	49
3.5.1	Parametric Approaches	50
3.5.2	Non-Parametric Approaches	52
3.6	Choice of Frontier Analysis Method	57
3.7	Input and Output Variables for DEA Model.....	58
3.8	Strengths and Limitations of the DEA Method	60
3.9	The Determinants of the Efficiency of Banks	62
3.9.1	Internal Determinants.....	62
3.9.2	External Determinants.....	64
3.9.3	The Regulations and Supervision Determinants	66
3.10	Bank Regulation and Supervision and Islamic Banks.....	69
3.11	Bank Efficiency and Countries Income Classifications	72
3.12	Conclusion	75
CHAPTER FOUR: METHODOLOGY		76
4.1	Introduction	76
4.2	Measuring inputs and Outputs.....	76
4.3	Data Collection.....	78
4.4	Hypotheses Statement	81
4.4.1	Capitalization	81
4.4.2	Liquidity.....	82
4.4.3	Bank Size	82
4.4.4	Overhead Expenses	83
4.4.5	Gross Domestic Product (GDP).....	83
4.4.6	Inflation.....	84
4.4.7	Banking Sector's Concentration	84
4.4.8	Banking Sector Risk (Z-Score).....	85
4.4.9	Pillar 1: Capital Requirements	85
4.4.10	Pillar 2: Supervisory Power	89
4.4.11	Pillar 3: Market Discipline.....	90
4.5	First Stage Analysis: Estimation of Technical Efficiencies.....	92
4.5.1	Data Envelopment Analysis: Some Basics.....	92
4.5.2	DEA Efficiency Model.....	93
4.5.3	Univariate Analysis - Statistical Test Based on DEA (Efficiency Robustness Tests)	96
4.5.4	Parametric Test	98
4.5.4	Non-Parametric Test.....	99
4.6	Second Stage Analysis: Determinants of Technical Efficiencies	100
4.6.1	Robustness Test.....	103
4.6.2	Panel Data Estimation	104
4.6.3	Explanatory Variables	107
4.7	Conclusion	112
CHAPTER FIVE: TECHNICAL EFFICIENCY AND UNIVARIATE ANALYSIS		114
5.1	Introduction	114
5.2	Efficiency of the Islamic Banking Sectors	115
5.2.1	Efficiency of The Islamic Banking Sector: MENA Countries.....	116

5.2.2	Efficiency of The Islamic Banking Sector: ASIA Countries	120
5.2.3	Efficiency of The Islamic Banking Sector: Other Countries	124
5.3	Efficiency Of The Mena, Asia And Others Banking Sectors by Income Levels	127
5.4	Developments in Returns-To-Scale of the Islamic Banking Sector	139
5.4.1	Returns to-Scale by Year	140
5.4.2	Returns-to-Scale by Region	142
5.5	Univariate Analysis: DEA Based Test Results	143
5.5.1	Univariate Test Analysis: High-Income vs. Middle-Income Countries	145
5.5.2	Univariate Test Analysis: High-Income vs. Low-Income Countries	149
5.5.3	Univariate Test Analysis: Middle-Income vs. Low-Income Countries	153
5.6	Conclusion	156

CHAPTER SIX: MULTIVARIATE REGRESSION ANALYSIS RESULTS AND DISCUSSIONS 159

6.1	Introduction	159
6.2	Descriptive Statistics Analysis	161
6.3	Multicollinearity Test	163
6.4	Determinants of the Efficiency of Islamic Banks – Internal Variables (Bank-Specifics)	165
6.4.1	Capitalization (EQASS)	166
6.4.2	Liquidity (LOANSTA)	168
6.4.3	Bank Size (TA)	169
6.4.4	Overhead Expenses (NIETA)	169
6.5	Determinants of the Efficiency of Islamic Banking – (Bank Specifics and Macroeconomics)	171
6.5.1	Gross Domestic Product (GDP)	172
6.5.2	Inflation (INFL)	172
6.5.3	Concentration (CR3)	173
6.5.4	Banking Sector Risk (Z-score)	173
6.6	Determinants of the Efficiency of Islamic Banking – Banking Regulations and Supervision Variables:	174
6.6.1	Robustness Checks: Controlling for Countries’ Income Levels ..	176
6.6.2	Robustness Checks: Controlling for Region	181
6.7	The Impacts of Supervisory Power Towards the Efficiency of Islamic Banks	188
6.7.1	Prompt Corrective Power Index	190
6.7.2	Official Supervisory Power Index	191
6.7.3	Restructuring Power Index	191
6.7.4	Declaring Insolvency Power Index	192
6.8	The Impacts of Capital Requirement Towards the Efficiency of Islamic Banks	193
6.8.1	Raising More Capital to Meet Capital Adequacy Requirement... ..	196
6.8.2	Shifting from High-Risk to Low-Risk Assets	197
6.8.3	Profit-Sharing Investment Accounts (PSIAs) and Capital Adequacy Requirement	199

6.9 The Impacts of Activity Restrictions Towards the Efficiency of Islamic Banks.....	205
6.9.1 Securities Activities	209
6.9.2 Insurance Activities.....	209
6.9.3 Real Estate Activities	210
6.10 The Impacts of Private Monitoring Towards the Efficiency of Islamic Banks.....	212
6.11 Conclusion	216
CHAPTER SEVEN: SUMMARY, RECOMMENDATIONS AND IMPLICATIONS	223
7.1 Summary of the Study	223
7.2 First Stage Analysis: Estimation of Technical Efficiency and Univariate Analysis.....	225
7.3 Second-Stage Analysis: Determinants of Efficiency: Multivariate Regression Analysis.....	228
7.4 Policy Implications, Limitation and Recommendations.....	240
7.5 Limitations of the Study	247
7.6 Conclusion	249
REFERENCES.....	252
APPENDIX A: THE LIST OF ISLAMIC BANKS AND LIST OF VARIABLES AND DATA SOURCES	276
APPENDIX B: TECHNICAL EFFICIENCY ANALYSIS OF MENA, ASIA AND OTHER COUNTRIES.....	286
APPENDIX C: BANK REGULATIONS AND SUPERVISION INDEX.....	291

LIST OF TABLES

Table 1.1	Major Risk Faced by Islamic Banking Products	5
Table 3.1	Estimation Techniques and Types of Efficiency	58
Table 4.1	Descriptive Statistics for the DEA Input and Output Variable	78
Table 4.2	Scale Efficiency Analysis: MENA Countries	109
Table 5.1	Technical Efficiency Analysis (CRS Model): MENA Countries	116
Table 5.2	Technical Efficiency Analysis (VRS Model): MENA Countries	118
Table 5.3	Scale Efficiency Analysis: MENA Countries	119
Table 5.4	Technical Efficiency Analysis (CRS Model): Asia Countries	122
Table 5.5	Technical Efficiency Analysis (VRS Model): Asia Countries	122
Table 5.6	Scale Efficiency Analysis: Asia Countries	123
Table 5.7	Technical Efficiency Analysis (CRS Model): Other Countries	124
Table 5.8	Technical Efficiency Analysis (VRS Model): Other Countries	126
Table 5.9	Scale Efficiency Analysis: Other Countries	127
Table 5.10	Summary of Efficiency Scores-Analysis by Income Levels	128
Table 5.11	The Composition of Production Frontiers	131
Table 5.12	Developments in Returns to Scale (RTS)	140
Table 5.13	Summary of Parametric and Non-Parametric Tests – High-Income vs. Middle-Income Countries	145
Table 5.14	Univariate Tests Yearly Analysis – High-income vs. Middle-income Countries	147

Table 5.15	Summary of Parametric and Non-Parametric Tests – High-Income vs. Low-Income Countries	149
Table 5.16	Univariate Tests Yearly Analysis – High-Income vs. Low-Income Countries	151
Table 5.17	Summary of Parametric and Non-Parametric Tests – Middle-Income vs. Low-Income Countries	153
Table 5.18	Univariate Tests Yearly Analysis –Middle-Income vs. Low-Income Countries	155
Table 6.1	Descriptive Statistic on Internal Variables Model	161
Table 6.2	Descriptive Statistic on External Variables Model	162
Table 6.3	Descriptive Statistics on Banking Regulations and Supervision Model	162
Table 6.4	Test of Multicollinearity on Independent Variables	164
Table 6.5	Panel Regression Analysis: Internal Variables Estimates	165
Table 6.6	Panel Regression Analysis: External Variables Estimates	171
Table 6.7	Panel Regression Analysis: Banking Regulations and Supervision	174
Table 6.8	Panel Regression Analysis: Robustness Check for High-Income Countries	177
Table 6.9	Panel Regression Analysis: Robustness Check for Middle-Income Countries	178
Table 6.10	Panel Regression Analysis: Robustness Check for Low-Income Countries	179
Table 6.11	Panel Regression Analysis: Robustness Check: MENA Countries	182
Table 6.12	Panel Regression Analysis: Robustness Check: Asia Countries	183
Table 6.13	Panel Regression Analysis: Robustness Check: Other Countries	184
Table 6.14	Summary of Sensitivity Analysis Results	222

LIST OF FIGURES

Figure 1.1	Global Assets of Islamic Finance	2
Figure 1.2	Islamic Finance by Country	2
Figure 2.1	Farrell's Efficiency Measurement	36
Figure 2.2	The Structure of the Basel II Accord	41
Figure 3.1	Scale Efficiency and Technical Efficiency	56
Figure 4.1	Number of Islamic Banks According to Region: MENA ASIA and Others during 2004-2010	80

ACRONYMS AND ABBREVIATIONS

FSA	Financial Services Authority
BCBS	Basel Committee on Banking Supervision
IFSB	Islamic Financial Services Board
AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
SAMA	Saudi Arabian Monetary Agency
LIBOR	London Interbank Offering Rate
DCR	Displaced commercial risks
IDB	Islamic Development Bank
IMF	International Monetary Fund
RWA	Risk weighted assets
CE	Cost efficiency
TE	Technical efficiency
PTE	Pure Technical Efficiency
AE	Allocative (or price) efficiency
DMU	Decision Making Units
CRS	Constant return to scale
VRS	Variable returns to scale
BCC	Banker- Charnes-Cooper
CCR	Charnes-Cooper-Rhodes
SFA	Stochastic Frontier Approach
DFA	Distribution Free Approach
TFA	Thick Frontier Approach
PPS	Production possibility set
OLS	Ordinary least square
FEM	Fixed effect model
REM	Random effect model
GLS	General least square
SCP	Structure Conduct Performance
EMH	Efficiency Market Hypothesis
IIFM	International Islamic Financial Market
GCIBAFI	General Council of Islamic Banks and Financial Institutions
LMC	Liquidity Management Centre
IIRA	International Islamic Rating Agency
IICRCA	International Islamic Centre for Reconciliation and Commercial Arbitration
ARCIFI	Arbitration Centre for Islamic Banks and Financial Institutions
IILMC	International Islamic Liquidity Management Corporation
IRR	Investment Risk Reserve

PSIA	Profit-sharing investment accounts
IIRA	International Islamic Rating Agency
IFSP	Integrated Financial Services Provision
PER	Profit Equalization Reserves

CHAPTER ONE

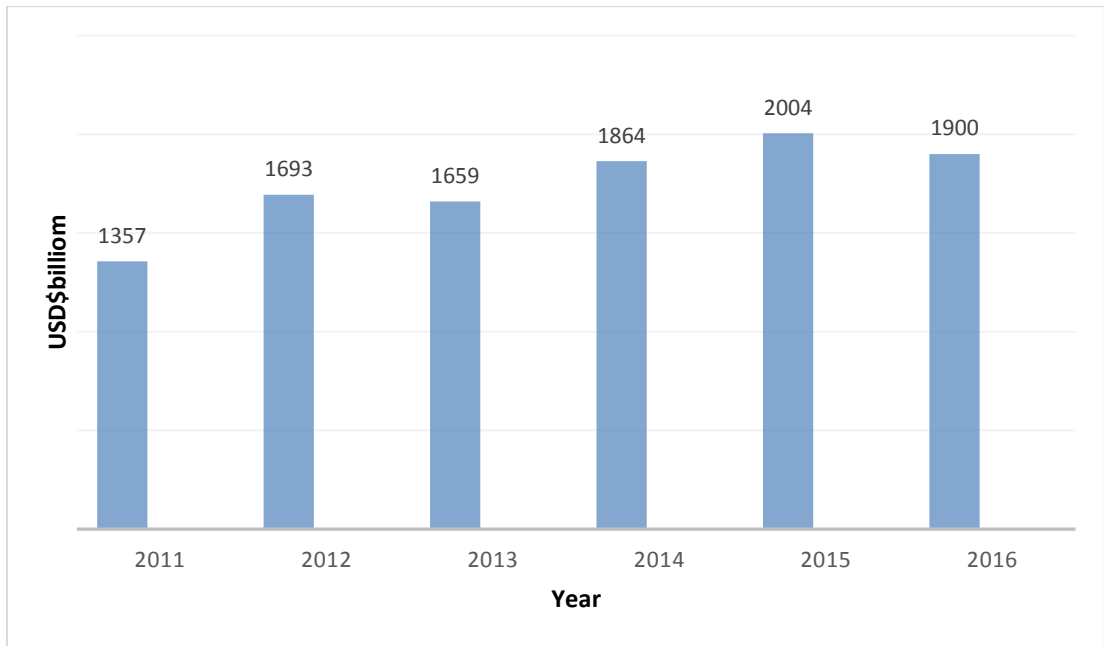
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Moving towards dual banking environment, the Dubai Islamic Bank pioneered the move by private Islamic banks towards maximizing profitability offering consumer products and banking services. The bank positions itself as innovative and flexible by offering both an “Islamic Window” and traditional banking making available *Sharī’ah*-compliant products and services. It is common practice today to find conventional banks offering Islamic banking services¹, thus providing established international banks to offer the Islamic banking option in financial products and services.

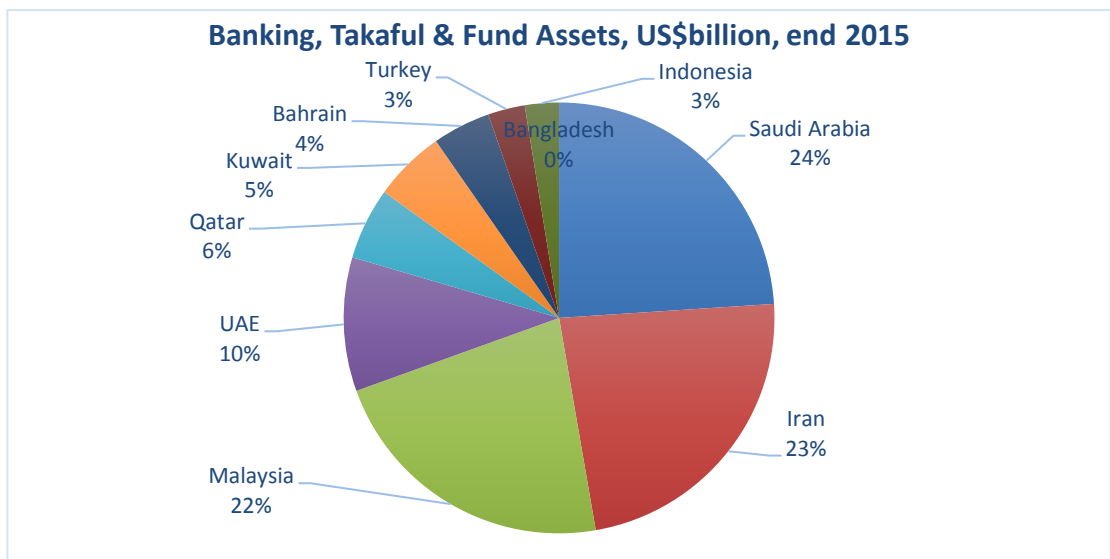
The “Islamic window” operation is an important factor that has contributed to the popularity of Islamic banking and accelerated its development and growth. The UK Islamic Finance Secretariat (UKIFS), has reported that worldwide, *Sharī’ah*-compliant assets have grown in value from US\$1357 billion in 2011 to US\$1900 billion at the end of 2016 (Figure 1.1). For the time of 2012 to 2015, global assets of Islamic finance grew by 40% with the leading players being Saud Arabia Iran, Malaysia and UAE, Qatar, Kuwait and Bahrain (Figure 1.2).

¹ There are two types of Islamic financial institutions: those involved solely in Islamic compliant business, and those that offer *Shariah* compliant products and services, but whose businesses do not comply with Islamic law. The necessity to separate the two led to the creation of the “Islamic window” concept.



Source: ICD – Thomson Reuters 2015

Figure 1.1 Global Assets of Islamic Finance



Source: ICD – Thomson Reuters 2015

Figure 1.2 Islamic Finance by Country

1.2 OVERVIEW OF ISLAMIC BANKING

The financing activities of Islamic Banking are carried out using two financing methods which are the profit-and-loss sharing (PLS) model and a model that involves trading on credit, with the buyer incurring debts. In comparison to a conventional bank, an Islamic bank offers similar products and services such as deposit accounts, various types of financing, credit cards and mortgage. However, Islamic bank products are based on concept of profit and loss sharing, while conventional banks are not. Like other financial institutions, risk is among the main challenges and likewise it needs to be addressed properly by Islamic banks to make sure that they operate efficiently. Islamic banks' activities differ in substance and in form from conventional banks' operations, thus, they face a different risk profile. Basel II identified three types of risk exposures for conventional banks: credit risk, market risk and operational risk. Credit risk is the default payment risk and risk weights are assigned based on the counterparty risk. Market risk results from the risk of losses in on- and off-balance sheet positions arising from movements in market prices. It applies to the portfolio of financial instruments held by the bank and is composed of four elements: interest rate risk (further divided into specific and general market risk), equity position risk, foreign exchange risk and commodity risk. Finally, operational risk represents the risk of loss resulting from inadequate internal processes.

At a theoretical level, Islamic banks not only share the same risks as conventional banks, but Islamic banks also have to deal with new and unique risks as a result of their unique asset and liability structure (Khan & Ahmed, 2001). According to Khan and Ahmed (2001), this new risk exists due to the compliance of *Shari'ah* requirement such as agency risk, payment risk and delivery risk (Table 1.1). Among the nature of operations in Islamic financial institutions, majority of them are based on

profit and loss sharing, as such it is perceived that such transactions pose lower risk. Qureshi (1984) claims that equity-based financing will increase the exposure of the Islamic bank to risks. According to Sundararajan and Errico (2002), Islamic financial institutions can be riskier than conventional financial institutions due to several reasons including the specific nature of risk and unlimited number of ways to finance a project using either profit and loss sharing or non-profit and loss sharing contracts. Lack of standardization in each type of contract is also another factor that is why Islamic financial institutions are riskier than its opponent.

Regarding funding structure, as compared to conventional banks, several types of accounts are not guaranteed by the Islamic banks. There are three funding sources where Islamic banks can finance their balance sheet growth: capital, demand deposits, and profit-sharing investment accounts (PSIA) (Turk-Ariss & Saredine, 2007; Beck, Demirgüç-Kunt & Merrouche, 2010, 2013; Saeed & Izzeldin, 2014). The profit sharing investment accounts (PSIA) contain restricted and unrestricted investment accounts which are not guaranteed by the bank because investment account holders (IAH) are considered as investors. The profit and initial capital invested by this category of depositors are related to the success of the investment and therefore, deposit insurance is not required.

Table 1.1 Major Risk Faced by Islamic Banking Products

Types of Contract	Major Risks	Risk Classification
Murabahah	Credit risk	Unsystematic risk
Musharakah	Market risk Agency risk	Systematic risk
Mudarabah	Market risk Agency risk	Systematic risk
Ijarah Thumma Al-Bay	Credit risk	Unsystematic risk
Ijarah Wa Iktina	Operational risk Payment risk	Unsystematic risk
Salam	Delivery risk	Systematic risk
Istisna'	Delivery risk	Systematic risk
Bay' Al-Enah	Credit risk	Unsystematic risk
Tawarruq	Credit risk	Unsystematic risk
Commodity Murabahah	Credit risk	Unsystematic risk

Source: Rosli and Zaini (2008)

1.3 ISLAMIC BANKING AND CONVENTIONAL BANKING COMPARED

Islamic banking is essentially a financial business model operated along the lines of Islamic teaching guided by the Holy Quran. Conventional commercial banking is in business for the purpose of maximizing profits by maximizing shareholders wealth.

According to the *Sharī'ah* law, Islamic financial systems must be required to follow four fundamental principles:

1. Islamic banking prohibits the element of interest (“*riba*”)² in its business because in Islam, money is perceived as “a medium of exchange, store of value and unit of measurement.” On the other hand, paying and receiving interest is essential in the business of conventional banking. In Islamic banking practices the unique concept of profit-and-loss, based on *Mudarabah* (sharing of profit) and *Musyarakah* (joint venture). Under this

² *Riba* is interest or any ex ante return derived on a loan/debt. Islamic banks will not take or give any loan or enter into contracts seeking any increase over the principal of loans or debts created as a result of any credit transaction. Buying/selling goods, both on cash payment and credit, for the purpose of earning profit is permissible (Ayub, 2007).

concept, banks and borrowers as well as depositors are akin to partners and share the profits and losses. Supporters of Islamic banking believe that the concept is theoretically beneficial in facing external liabilities compared to conventional banks because losses are partly borne by the depositors (Khan & Mirakhor, 1989).

2. Islamic banking avoids activities that involve any form of uncertainty (*gharar*) because it implies gambling which is not acceptable in Islam. This is a distinct difference compared to conventional banking which is not prohibited from involvement in speculative business activities. *Gharar* refers to any transaction of probable objects whose existence or description are not certain, due to lack of information and knowledge of the ultimate outcome of the contract or the nature and quality of the subject matter of it. Speculative activities in capital market, derivatives instruments and short-selling contracts are vivid examples of *gharar* in banking and finance industry. Allah (S.W.T) mention “Eat not your property among yourselves unjustly by falsehood and deception, except it be a trade amongst you by mutual consent (*Al-Baqarah*, 2:188; *Al-Nisa*, 4:29). The Quran has categorically prohibited gambling (*Al-Baqarah*, 2:219 and *Al-Maidah*, 5:93). Murat Çizakça (2014) argues *gharar* is a level of unshared uncertainty that Islamic law prohibits while Velayutham (2014) points out that the Islamic principle have the greatest impact on Islamic economics by prohibiting of the payment of interest (*riba*), sale of risky assets (*gharar*) and gambling or speculation (*maysir*).

3. Implementing *zakat*, the mandatory Islamic tax. Muslims have to pay *zakat* by contributing a portion of their wealth to charity. It is perceived as a form of worship and self-purification. It is based on the concept of equal distribution of wealth and a way of assisting the poor and *Muslims* pay *zakat* in addition to secular tax imposed by the governments. In this regard, Islamic banks differs from conventional which pay only corporate tax, while Islamic banks have to additionally pay the *zakat*.
4. *Maysir*, literally means gambling. Islam has also categorically prohibited all forms of gambling. *Maysir* refers to the easy acquisition of wealth by chance, whether or not it deprives the other's right. Hameed (2009, p.44) defines *maysir* as gambling, also, any form of business activity where monetary gains is derived from mere chance, speculation or conjecture. As noted earlier in the Quran, Allah (S.W.T) clearly prohibit gambling (*Al-Baqarah*, 2:219 and *Al-Maidah*, 5:93). contracts involving pure speculation, conventional insurance and derivatives for instance are the examples of *maysir*.

All in all, Islamic financial transactions must be free from *riba*, *gharar* and *maysir*, because it is not only due to inherent injustice in this mechanism, but these elements would also bring social harm in the form of inflation, unemployment, volatility, instability, and environmental degradation (Camille Paldi, 2014).

1.4 TECHNICAL EFFICIENCY AS AN EFFICIENCY MEASUREMENT

Technical efficiency is major criteria for measuring efficacy of banks. Technical efficiency means producing maximum output with given inputs; or equivalently, using minimum inputs to produce a given output (Yang, 2005). Technical efficiency has its

advantages, as it can be very informative as to how well a bank undertakes operations. The technical efficiency deals with employing labor, capital and machinery as inputs to produce outputs based on the best practice in a given sample of decision making units (Bhat, 2001). When we measure the technical efficiency of bank and found it inefficient, we are claiming that we could achieve the desired output with less input, or that the input employed could produce more of the output desired. This research will focus on the technical efficiency only because technical efficiency is useful in studying the efficiency effects of firm characteristics and of new policies, strategies, and technology.

1.5 STUDIES ON EFFICIENCY OF ISLAMIC BANKS

Evaluating and analysing the efficiency of the banking sector has become an increasingly popular area of research in applied economics. There are two reasons for this: firstly, the financing industry has been rapidly globalised, and secondly, the internal financial market has become more competitive than ever.

The efficiency of the banking sector is seen as an indicator of how healthy and stable a country's financial system is. Generally, efficiency in economics refers to the efficiency of a system to generate maximum output from the inputs. The efficiency of a system is reflected in the way it is able to increase output with the same input or in the way it is able to maintain the same output with reduced input. Chortareas et al. (2010) maintain that the efficiency of banks can be enhanced with the existence of stronger capital restrictions and official supervisory powers.

Iqbal and Molyneux (2005) provide three reasons for stressing the importance investigating the efficiency of Islamic banking. First, enhancing cost efficiency leads to higher profits and enhances the possibility of survival should there be deregulations and market competition. This is particularly relevant to Islamic banks because they compete