IFSB WORKING PAPER SERIES
WP-05/03/2016

SHARĪ'AH NON-COMPLIANCE RISK IN THE BANKING SECTOR: IMPACT ON CAPITAL ADEQUACY FRAMEWORK OF ISLAMIC BANKS

Erdem Oz, IFSB
Zahid ur Rehman Khokher, IFSB
Mohammad Mahbubi Ali, ISRA
Dr. Romzie Rosman, ISRA

March 2016

ISLAMIC FINANCIAL SERVICES BOARD
ISRA International Shari'ah Research Academy for Islamic Finance

ISLAMIC FINANCIAL SERVICES BOARD
ISRA الأكاديمية العالمية للبحوث الشرعية International Shari'ah Research Academy for Islamic Finance

IFSB WORKING PAPER SERIES

WP-05/03/2016

SHARĪ'AH NON-COMPLIANCE RISK IN THE BANKING SECTOR: IMPACT ON CAPITAL ADEQUACY FRAMEWORK OF ISLAMIC BANKS

Erdem Oz, IFSB
Zahid ur Rehman Khokher, IFSB
Mohammad Mahbubi Ali, ISRA
Dr. Romzie Rosman, ISRA

March 2016

Published by: Islamic Financial Services Board
Level 5, Sasana Kijang, Bank Negara Malaysia
2, Jalan Dato' Onn, 50480 Kuala Lumpur, Malaysia
Email: ifsb_sec@ifsb.org

ISBN 978-967-5687-47-1

ABOUT THE ISLAMIC FINANCIAL SERVICES BOARD (IFSB)

The IFSB is an international standard-setting organisation which was officially inaugurated on 3 November 2002 and started operations on 10 March 2003. The organisation promotes and enhances the soundness and stability of the Islamic financial services industry by issuing global prudential standards and guiding principles for the industry, broadly defined to include banking, capital markets and insurance sectors. The standards prepared by the IFSB follow a lengthy due process as outlined in its Guidelines and Procedures for the Preparation of Standards/Guidelines, which involves, among others, the issuance of exposure drafts, holding of workshops and, where necessary, public hearings. The IFSB also conducts research and coordinates initiatives on industry-related issues, as well as organises roundtables, seminars and conferences for regulators and industry stakeholders. Towards this end, the IFSB works closely with relevant international, regional and national organisations, research/educational institutions and market players.

For more information about the IFSB, please visit **www.ifsb.org**.

TABLE OF CONTENTS

ABBREVIATIONS iii

ABSTRACT iv

SECTION 1: INTRODUCTION 1

1.1 Definition and Nature of Operational Risk 1

1.2 Capital Adequacy Framework for Operational Risk 2

1.3 Objectives, Methodology and Structure of the Paper 5

1.4 Limitations of the Paper 6

SECTION 2: SHARĪ'AH NON-COMPLIANCE RISK AS A COMPONENT OF OPERATIONAL RISK IN THE CAPITAL ADEQUACY FRAMEWORK 9

2.1 Concept of Risk in Banking 9

2.2 Risks in Islamic Banks (Market, Credit and Operational Risks) 10

2.3 Significance and Constituents of Operational Risk 11

2.4 Components of Operational Risk in Islamic Banks 18

2.5 Capital Adequacy and Measurement of Operational Risk for Capital Charge 22

2.6 Application of the Capital Adequacy Requirement for Islamic Banks 34

SECTION 3: IDENTIFYING SHARĪ'AH NON-COMPLIANCE RISK: A CONTRACTUAL PERSPECTIVE 39

3.1 Concept of Sharī'ah 39

3.2 Sharī'ah Non-Compliance Risk in Islamic Banks 40

3.3 Methodology for Dealing with Sharī'ah Non-Compliance Risk 50

3.4 Examples of Sharī'ah Non-Compliance Events in Islamic Banks 53

SECTION 4: THE IMPACT OF SHARĪ'AH NON-COMPLIANCE RISK ON CAPITAL ADEQUACY REQUIREMENTS 59

4.1 Methodology for Measuring the Significance of SNCR in the Capital Adequacy Framework 59

4.2 Analysis of SNCI for Islamic Banks 61

4.3 Stress Testing 67

SECTION 5: CONCLUSION AND POLICY RECOMMENDATIONS 71

5.1 Main Findings and Considerations 71

5.2 Policy Options and Guidance for RSAs to Address SNCR in Capital Adequacy Calculations 71

5.3 Role of Effective Sharī'ah Governance and Disclosure Regimes 73

APPENDIX

Appendix 1: Details of Data Collection for the Study 75
Appendix 2: Financial Data of 51 Islamic Banks for 2010–2014 76
Appendix 3: Financial Data of 28 Islamic Banks for 2010–2014 85
Appendix 4: Ratio Analysis of 51 Islamic Banks for 2010–2014 89
Appendix 5: The Results of Pearson Correlation 95
Appendix 6: Descriptive Statistics of Scenarios 1 and 2 96

REFERENCE **97**

ABBREVIATIONS

AMA	Advanced measurement approach
AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
BCBS	Basel Committee on Banking Supervision
BIA	Basic indicator approach
CAR	Capital adequacy ratio
GI	Gross income
ICAAP	Internal Capital Adequacy Assessment Process
IFSB	Islamic Financial Services Board
IIFS	Institutions offering Islamic financial services in banking segments [other than Islamic insurance (*Takāful*) institutions and Islamic collective investment schemes]
PSIA	Profit-sharing investment accounts
RSAs	Regulatory and supervisory authorities
SNCI	Sharī‘ah non-compliant income
SNCR	Sharī‘ah non-compliance risk
TSA	The standardised approach

ABSTRACT[1]

The paper aims to study the nature of Sharī'ah Non-Compliance Risk (SNCR) and explore its implications on the capital adequacy of Islamic banks. This paper endeavours to describe an appropriate approach for the application of capital charge for SNCR in the light of currently available data as well as provide a direction for future studies in this area. It provides an overview on the nature of operational risk and associated capital adequacy requirements for both conventional and Islamic banks. It further explores the identification process of SNCR from a contractual perspective and the methodologies adopted in dealing with SNCR.

The empirical study focuses on the identification of SCNR resulting from the failure of Islamic banks to satisfy the essential Sharī'ah requirements and conditions as stipulated in the relevant jurisdiction's standards, or widely accepted international Sharī'ah standards, the implications of which are reflected in SNCI of Islamic banks that serve as 'proxy' for the SNCR.

Utilising the data of 51 Islamic banks from 11 countries for a five-year period from 2010 to 2014, the paper performs the descriptive and correlation analysis, followed by regression tests to examine the significance of Sharī'ah non-compliance income vis-à-vis bank-specific variables such as the size, profitability and capitalisation as well as macroeconomic indicators. This analysis is supplemented by stress testing in the form of outlining two scenarios to analyse SNCR as a tail risk under extreme but plausible events.

The findings, with its limitations of availability and acquiring of data, lead to the conclusion that instead of applying an additional capital charge to cover SNCR in Islamic banks, tools available under the supervisory review process provide a more effective mechanism for dealing with individual instances of a high level of SNCR. The study proposes some policy options and guidance for regulatory and supervisory authorities to address SNCR. In this context, it suggests to collect adequate information on material developments of SNCR in the Islamic banks, including pertinent information on the current and emerging SNCR exposures and vulnerabilities to undertake an effective supervisory review process. Similarly, it

[1] The working paper greatly benefited from the comments and feedback of Dr. Marjan Muhammad from ISRA and Professor Volker Nienhaus, as well as the assistance from the staff of the Technical and Research Division of the IFSB Secretariat, including Mr Madaa Munjid, Ms Aminath Amany Ahmed, Mrs Noor Ashikin Ismail, Mr Saad Bakkali and research fellow, Mrs Kamola Bayram. Similarly, Mrs Siham Ismail and Ms Rosmawatie Abdul Halim provided assistance in the formatting and publication of the paper. We are also grateful to the banking regulatory and supervisory authorities, multilateral bodies, and other institutions that are members of the IFSB for their useful comments on the draft paper.

suggests that Islamic banks should be aware of the implications of SNCR for the overall enterprise risk management. The study also emphasises the significance of implementing an effective and comprehensive Sharī'ah governance system, which is the distinctive feature of Islamic finance. It also highlights the issues and challenges in the disclosure practices of Islamic banks in relation to SNCR, in which consistent and elaborate regulatory disclosure requirements could provide sufficient information to the stakeholders for assessing the level of SNCR in individual institutions.

Keywords: Sharī'ah non-compliance risk, operational risk, Islamic banks, capital adequacy

SECTION 1: INTRODUCTION

The increased complexity and size of the banking sector is creating greater potential exposure by banks to operational risk, which can be just as damaging as other sources of risk, such as credit and market risk. Globalisation, the sophistication of new financial products and diversity of financial institutions, the use of highly automated technology, and the growth of e-commerce all encourage regulatory and supervisory authorities (RSAs) to be more cautious about operational risk, especially after a series of major losses – or near collapses – faced by some conventional banks as a result of operational risk events. In the past two decades, there has been an increased recognition of operational risk, not only by banks and RSAs, but also by the international standard-setting bodies.

1.1 Definition and Nature of Operational Risk

Although awareness of operational risk has gained fresh impetus in recent years following major losses suffered by many banks due to associated events, it is still an evolving risk management discipline. While definitions of market risk and credit risk are relatively clear, the definition of operational risk has continued to evolve over time. The initial definitions were based mostly on an exclusion principle, such as "non-quantifiable risks faced by a bank" or "risks other than market or credit risk". However, recent definitions focus more on the "substance" of operational risk. For example, the Basel Committee on Banking Supervision (BCBS) has defined operational risk as "the risk of losses resulting from inadequate or failed internal processes, people and systems or from external events".[2]

For Islamic banks, the scope of operational risk also adds to this definition the losses resulting from Sharī'ah non-compliance and failure to meet their fiduciary responsibilities. As defined by the Islamic Financial Services Board (IFSB) in IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)* (2005), operational risk in Islamic banking can be categorised into three main types of risk: general, legal and Sharī'ah non-compliance risks. General risks are those that result from various kinds of banking operations conducted by Islamic banks that are common to all financial intermediaries, arising from people, processes, systems and external events. In the case of legal risks, the main concern for Islamic banks is the issue of enforceability. However, the inclusion of legal risk in the operational risk definition creates some challenges in terms of measurement

[2] BCBS, *Working Paper on the Regulatory Treatment of Operational Risk*, www.bis.org/publ/bcbs_wp8.pdf, September 2001.

of risk, due to difficulties in defining its nature. While the general and legal risks facing Islamic banks are mostly similar to, but not limited to, those faced by conventional banks, Sharī'ah non-compliance is a unique risk for Islamic banks.

Operational risk is also much harder to quantify and model compared to market and credit risks, because it deals mainly with tail events, rather than with risks faced by banks in their normal course of business. Banks may be relatively more transparent in calculating their market and credit risk exposure than their operational risk, which remains opaque and more complex to quantify. Credit and market risks (or, collectively, "financial risk") therefore have a direct correlation with the income-creation aspect of the banks, whereas operational risk primarily creates loss for banks. It follows that banks may accept a certain degree of financial risk as tolerable, based on their business model and strategy. On the other hand, operational risk is largely considered undesirable.

Risks that typically fall under the rubric of "operational risk", such as telecommunications failures or employee fraud, do not lend themselves as readily to risk modelling. The measurement of operational risk is distinct from other types of banking risks because operational risk deals with aberrant, rather than normal events, and exposure to operational risk is typically less predictable and thus more difficult to model. While some operational risk exposures cater to quantifiable measures using a proxy indicator, many other types of operational risk require subjective judgment and estimation. In addition, the diverse nature of operational risk – which may range from internal or external disruptions to business activities and the unpredictability of their overall financial impact – complicates systematic measurement. For example, losses from external events – such as a natural disaster that damages a bank's physical assets, or events that disrupt business – are relatively easier to define than losses from internal risks, such as product flaws. Since the risks from internal problems will be closely tied to a bank's specific products and business lines, they are more firm-specific than those due to external events. Thus, setting relevant and reliable indicators is a particular challenge in assessing operational risk.

1.2 Capital Adequacy Framework for Operational Risk

Capital has an important role in maintaining the stability and soundness of the overall banking system. It serves as a safety net against unexpected losses and absorbs shocks. Similarly, it acts as a cushion for potential losses arising from both on- and off-balance sheet exposures, which protects the bank's depositors or other fund providers. Thus, a well-capitalised bank boosts the confidence of its customers on both sides of the balance sheet.

The capital adequacy requirement for banking institutions seeks to ensure that risk exposures of banks are backed by an adequate amount of high-quality capital that can absorb losses on a going-concern (i.e. continuing) basis, thereby ensuring a bank's ability to meet its obligations as they fall due. The requirements set by the RSAs also seek to protect depositors and other fund providers in a liquidation scenario by promoting an additional cushion of assets that can be used in meeting their claims.

Due to concerns about the soundness of operational risk management practices and techniques used by the conventional banking sector, and the limited guidance available to RSAs on how to monitor and supervise these challenges, in 2003 the BCBS issued *Sound Practices for the Management and Supervision of Operational Risk*,[3] which outlined a set of principles for the regulation of operational risk management in the banking industry. Subsequently, under the Basel II framework (2005),[4] which aims to strengthen the soundness and stability of the banking system, the BCBS introduced, for the first time, a capital charge for operational risk. Along with the capital requirements, the BCBS also promotes the adoption of stronger risk management practices by the banking industry, including for operational risk. Due to measurement challenges in various components of operational risk, the Basel II framework uses gross profit of the bank, or that of various lines of business, as a proxy for the calculation of the capital charge.

Following the 2007–8 Global Financial Crisis, the BCBS embarked on a revision of its capital requirements for the banking industry in the light of lessons learned during the crisis. After a series of consultations, the BCBS introduced Basel III in December 2010 (revised in June 2011)[5] without making any major changes to the capital requirement for operational risk. Overall, three methods for the calculation of operational risk – namely, the basic indicator approach (BIA), (b) the standardised approach (TSA), and (c) the advanced measurement approach (AMA) – remained the same. The first two methods focus primarily on using gross profit of the bank or of various lines of business as a proxy, and then apply a certain percentage of the gross profit for the calculation of the capital charge. The third method focused on the internal models of the internationally active and sophisticated banks. However, the assumption that a bank's operational risk exposure increases linearly in proportion to revenue,[6] where gross income (GI)

---

[3] BCBS, *Sound Practices for the Management and Supervision of Operational Risk*, www.bis.org/publ/bcbs96.pdf, February 2003.

[4] BCBS, *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, www.bis.org/publ/bcbs118.pdf, November 2005.

[5] BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, www.bis.org/publ/bcbs189.pdf, December 2010.

[6] The phenomenon of linear increase in operational risk exposure in proportion to rise in revenue will also not necessarily hold if Sharī'ah non-compliance risk arises due to faults in contract documentation.

is the proxy indicator for operational risk exposure, is generally invalid and is a weakness of these simpler approaches (BCBS, 2014). Based on its preliminary findings from the available data, the BCBS found that the current standardised approaches are, on average, undercalibrated.

To take into account the fact that the relationship between the size and the operational risk of a bank does not remain constant, and that operational risk exposure increases with a bank's size in a non-linear fashion, the BCBS published a consultative paper on *Operational Risk: Revisions to the Simpler Approaches*[7] in October 2014. The paper suggests modifications to the existing framework for the calculation of a capital charge for operational risk that offer refinement of the proxy as well as consideration of other factors, such as the size and revenue of the bank. The new proxy identified by BCBS is the Business Indicator (BI), which comprises the three macro-components of a bank's income statement: the "interest component", the "services component", and the "financial component". Based on qualitative and quantitative analysis of the BCBS, the ability of the BI to capture a bank's exposure to the operational risk inherent in its mix of business activities is superior to that of GI. A bucket structure (five buckets), with coefficients increasing in value from 10% to 30% with the rise in value of the BI, has also been identified, with the capital needs for operational risk increasing in a non-linear fashion with the bank's size based on the study by the BCBS.

Earlier, in 2011, the BCBS also revised the *Principles for the Sound Management of Operational Risk*,[8] originally issued in 2003, to take into account the evolution of operational risk management over this period. The revised principles are based on best industry practices and supervisory experience, and cover three overarching themes: governance, risk management and disclosure.

In the case of Islamic finance, the Islamic Financial Services Board[9] defined and adopted operational risk for institutions offering Islamic financial services (IIFS) with some changes to cater for the unique nature of Islamic banking operations. The IFSB, in its definition of operational risk, incorporated possible causes of loss resulting from Sharī'ah non-compliance and failure to fulfil fiduciary responsibilities as part of operational risk.[10] Similar to the Basel II framework, the IFSB, in its *Capital Adequacy Standard* issued in 2005 (IFSB-2), assigned a capital charge for

---

[7] BCBS, *Operational Risk: Revisions to the Simpler Approaches, Consultative Paper*, www.bis.org/publ/bcbs291.pdf, October 2014.

[8] BCBS, *Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs195.pdf, June 2011.

[9] The IFSB is an international standard-setting organisation that promotes and enhances the soundness and stability of the Islamic financial services industry.

[10] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.

the operational risk of IIFS in which strategic and reputational risks were excluded because of the difficulty in measuring these risks and the fatal results faced by the banks due to them.[11] In line with the level of sophistication of IIFS, IFSB-2 mainly provided guidance on simpler approaches (BIA and TSA), without delving into the more complex AMA. However, it was mentioned in IFSB-2 that RSAs can apply an additional capital charge on the IIFS if Sharī'ah non-compliance risk (SNCR) is deemed significant. In its *Revised Capital Adequacy Standard* (IFSB-15),[12] the framework for operational risk of IIFS was kept unchanged in line with Basel III.[13]

1.3 Objectives, Methodology and Structure of the Paper

In the absence of sufficient data and methodology for the measurement of SNCR as a component of operational risk, most RSAs do not apply or require their IIFS to calculate a capital charge on SNCR. For this reason, queries have been raised about the appropriate approach to be adopted for the application of a capital charge on Islamic banks. This paper is an attempt to explore this question in the light of available data on SNCR in IIFS. Accordingly, the paper has been prepared to meet the following objectives:

1. to study the nature and components of SNCR in the Islamic banking sector;
2. to evaluate the approaches in identifying SNCR from a contractual perspective and methodologies to deal with SNCR;
3. to analyse the current level of SNCR faced by Islamic banks and methodologies for its measurement in the calculation of operational risk for capital adequacy purposes; and
4. to provide policy recommendations and strategies for mitigating SNCR and its consideration for capital adequacy calculation.

For the application of capital adequacy framework, Basel standards use "proxies" such as gross income or a "business indicator" to calculate the operational risk capital charge on the banking industry. Taking similar approach, the present study focuses on the identification of SCNR resulting from failure to satisfy the essential requirements and conditions of the Sharī'ah contracts as stipulated in the applicable standards in the relevant jurisdiction or other widely accepted international standards. The implications of these instances are reflected in the

---

[11] IFSB-2: *Capital Adequacy Standard for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.
[12] IFSB-15: *Revised Capital Adequacy Standard for IIFS*, December 2013.
[13] BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, www.bis.org/publ/bcbs189.pdf, December 2010.

Sharī‘ah non-compliant income (SNCI) of Islamic banks, which serves as a “proxy” for the SNCR.

For the purpose of this research, Islamic banks data of 23 jurisdiction for SNCI were searched from their Sharī‘ah reports, annual reports and/or financial statements for the years 2010–14. It was observed that Islamic banks in less than half of these jurisdictions report any information on SNCI. Accordingly, this study utilises data collected from 51 Islamic banks representing 11 jurisdictions for a five years period between 2010 and 2014.

Thus, the approach used to quantify and measure the impact of SNCR on the capital adequacy of Islamic banks is to conduct ratio analyses to gauge its significance vis-à-vis institutional indicators such as total assets, total equity and total net income. Similarly, other descriptive and correlation analyses were also undertaken. Regression analysis was performed to examine the significance of SNCI vis-à-vis bank-specific variables, such as the bank’s size, profitability and capitalisation as well as macroecnomic variable such as GDP per capita. Moreover, in consideration of the limitations of SNCI as an indicator of SNCR (See subsections 1.4 and 4.1 for details), two stress testing scenarios have been established to analyse SNCR as a tail risk event under extreme but plausible stress scenarios.

The rest of the paper is organised as follows. **Section 2** provides an overview of operational risk, including the SNCR as a component of operational risk in Islamic banks, and outlines the measurement of operational risk in the capital adequacy framework for both conventional and Islamic banks for the purpose of imposing a capital charge. **Section 3** explores the process of identifying SNCR from a contractual perspective and proposes methodologies for dealing with SNCR. **Section 4** examines the impact of SNCR on capital adequacy requirements based on the sample data of SNCI collected from Islamic banks’ annual reports, financial statements and Sharī‘ah reports. **Section 5** concludes the paper with an explanation of the main findings, policy recommendations and suggestions for future work.

1.4 Limitations of the Paper

Although this research was carefully prepared to identify the importance of SNCR for Islamic banks in terms of capital requirements based on maximum effort to get publicly available data from various jurisdictions, it is important to acknowledge its limitations and shortcomings. Firstly, disclosures of SNCI in any report do not include any ‘detailed information’ about SNCI and its sources. In general, the

Islamic banks mentioned in their Sharī'ah reports or annual reports that "earnings from activities prohibited by Islamic Sharī'ah Rules and Principles have been disposed of to charitable accounts". Moreover, as explained in detail in Section 3, not all SNCR events result in financial loss, as most can be rectified or purified. Further, it is not possible to know the exact number of SNCR event cases and their losses in detail. Secondly, the level of SNCI may vary from jurisdiction to jurisdiction because of the effectiveness of the Sharī'ah governance framework, including Sharī'ah review and audit. Thirdly, there is no standard for Islamic banks to use in gauging the level of Sharī'ah governance on a cross-sectoral basis.[14] Lastly, Islamic finance has negligible instances of extreme SNCR events, resulting in the failure of an Islamic bank. Most losses faced by Islamic banks in the past, albeit few, have been due to the failures in other elements of risk such as credit risk or management failures. The data for such extreme events is also not widely available. These limitations aside, this study is one of the first attempts to analyse SNCR from a capital adequacy perspective based on a five-year data set of 51 Islamic banks from 11 jurisdictions.

[14] Similar to the "corporate governance rating" used in the conventional sector, in which an opinion is provided on the relative standing of an entity with regard to the adoption of corporate governance practices, the availability of "Sharī'ah governance ratings" can be a useful and independent source of information for stakeholders about an institution's Sharī'ah governance practices.

SECTION 2: SHARĪ'AH NON-COMPLIANCE RISK AS A COMPONENT OF OPERATIONAL RISK IN THE CAPITAL ADEQUACY FRAMEWORK

2.1 Concept of Risk in Banking

Risk is generally defined as "uncertainty about a future outcome". There are multiple definitions of risk that include what may constitute a risk and the range of possible risks. Some of the more widely discussed definitions of risk include the possibility of an undesirable event, the loss from an unexpected event, the probability that "things won't go right", and the effects of an adverse outcome.[15] Risks are the fundamental component of financial intermediation, which is the main business of banks. The business of banking is mainly about taking and managing risks. A bank's success depends on how efficient and effective it is in terms of managing its risks. The capital of banks is a buffer against risks. However, with the increasing complexity and diversity of financial products and services, as well as the accelerating pace of globalisation, managing risks has become ever more complex, requiring that the risk measurement, management and control functions of banks be effective and robust. The most important issues for banks in managing their risks are: (a) defining, measuring and evaluating risks; and (b) tracing risks back to risk drivers that are under the control of management.[16]

It is evident that any attempt by a bank to manage its various risks without prior knowledge of its level of exposure to them, and their possible outcomes, will be meaningless. Knowing the magnitude of the risks that need to be kept under control, and what they actually mean in terms of potential value lost, is key to risk management. Risk evaluation is not simple, but it is much easier to address the drivers of the risks and to monitor, manage and measure them. In a bank, the risk management functions include continuous measurement of the risks of its current portfolio of assets and other exposures, communicating the risk profile of the bank to the other functions of the bank, and taking steps, either directly or in collaboration with other functions within the bank, to reduce the possibility of loss or to mitigate the size of the potential loss. The most important motive for banks in developing effective risk management practices is to continue to survive, given the drastic changes in the risk environment and numerous banking failures in the past, especially as a result of the Global Financial Crisis.

---

[15] GARP, *Foundations of Banking Risk: An Overview of Banking, Banking Risks, and Risk-Based Banking Regulation* (Hoboken, NJ: John Wiley & Sons, 2009).
[16] J. Bessis, *Risk Management in Banking* (Chichester, UK: John Wiley & Sons, 2002).

2.2 Risks in Islamic Banks (Market, Credit and Operational Risks)

To understand the importance of SNCR for Islamic banks, it is crucial to analyse the risks specific to them. It is a fact that banks, whether Islamic or conventional, take risks, which they transform and manage in the form of banking products and services. An additional feature of Islamic banks is that they are required to adhere to Sharī'ah principles in all their operations, which either alters the nature of the risk or exposes the Islamic bank to new types of risk. Sharī'ah principles, in many cases, also reduce the various types of risk faced by Islamic banks due to Islamic banking's inherent focus on the risk-sharing principle on both sides of the balance sheet. As explained in various IFSB standards such as IFSB-1,[17] IFSB-12,[18] etc., the nature of the risks faced by both conventional and Islamic banks – such as credit, market, operational and liquidity risk – changes from various perspectives. On the other hand, unique risks for Islamic banks – such as equity investment risk, rate of return risk or displaced commercial risk (DCR), and SNCR – need additional consideration by Islamic banks and their RSAs.

Credit, market and operational risks have many distinct features for Islamic banks, as outlined in the above standards. Credit risk is the failure of a counterparty to meet its obligations, which also applies to Sharī'ah-compliant contracts such as *murābaḥah*, *salam* and Sharī'ah-compliant securities and *ṣukūk.* Contracts such as *muḍārabah* and *mushārakah,* while being profit- and loss-sharing contracts in essence, are exposed to credit risk in the form of capital impairment risk and risk of non-payment of profits by the entrepreneur (*muḍārib)* or other partner *(mushārik)*. Market risk arises from losses in on- and off-balance sheet positions caused by movements in market prices – that is, fluctuations in the value of tradable, marketable or leasable assets (including *ṣukūk*), and of off-balance sheet individual portfolios. Operational risk, on the other hand, is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events, which also includes, for Islamic banks, possible loss resulting from Sharī'ah non-compliance and failure in performing their fiduciary responsibilities.

---

[17] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.
[18] IFSB-12: *Guiding Principles on Liquidity Risk Management for IIFS*, March 2012.

2.3 Significance and Constituents of Operational Risk

Operational risk management is not new to financial institutions. Stability of information technology (IT) systems, client claims, acts of fraud or internal controls failures have been closely monitored by banks for years. However, operational risk management has undoubtedly, for a number of reasons, received widespread recognition over the last few decades. The most important reason is the huge losses incurred by a number of financial institutions, including Barings, Daiwa, Allied Irish Bank and Merril Lynch, as a result of a malfunctioning of their operational risk management.[19] For example, the UK's oldest merchant bank, Barings Bank, failed in 1995, when a rogue trader caused the bank to lose around USD1.4 billion, driving it into bankruptcy.

In light of the high-profile operational risk losses, the BCBS took the view that special attention should be paid to operational risk, and an approach developed with the aim of generating an environment in which improvements in operational risk management are rewarded. The BCBS then started to focus more on operational risk and, in 1998, published its first document on the topic. The paper, titled *Operational Risk Management* discussed the prevailing operational risk management practices in internationally active banks and identified key areas for the considertion of regulators and supervisors. The document comments on the lack of a clear definition of what comprises operational risk, unlike other forms of risks, such as market or credit risk. The first definition of operational risk was provided in a 2001 BCBS publication as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events".[20] This definition was used for capital adequacy purposes and included legal risk, but excluded strategic and reputational risk. In a broad sense, the definition was based on the underlying causes of operational risk and sought to identify why a loss occurred. The four causes of operational risk were people, processes, systems and external factors. In 2003, the BCBS also published a set of principles for the effective management and supervision of operational risk, for use by banks and RSAs when evaluating operational risk management policies and practices.[21] In essence, it set up a framework of principles for the industry and supervisors on operational risk management.

---

[19] J.C. Hull, *Risk Management and Financial Institutions* (Englewood Cliffs, NJ: Pearson Prentice Hall, 2007).
[20] BCBS, *Working Paper on the Regulatory Treatment of Operational Risk*, www.bis.org/publ/bcbs_wp8.pdf, September 2001.
[21] BCBS, *Sound Practices for the Management and Supervision of Operational Risk*, www.bis.org/publ/bcbs96.pdf, February 2003.

These developments also provided incentives to the banks and their RSAs to expand their knowledge and experience of implementing operational risk management frameworks. As a result of the increased knowledge and experience in the banking sector gained through loss data collection exercises, quantitative impact studies, and range-of-practice reviews covering governance, data and modelling of operational risk, the BCBS updated its 2003 *Sound Practices* document in 2011 to reflect the enhanced sound operational risk management practices used by the industry. The *Principles for the Sound Management of Operational Risk* (the principles) incorporated the evolution of sound practice and provided 11 principles of sound operational risk management covering governance, the risk management environment and the role of disclosures.[22] The document also identified three lines of defence for operational risk – namely, business line management, an independent corporate operational risk management function and an independent review. These principles were based on sound industry practice, which expected banks to continuously improve their approaches to operational risk management and test their robustness on the basis of reliable data. In total, 11 principles are grouped into five broad categories: (i) fundamental principles of operational risk management; (ii) governance; (iii) risk management environment; (iv) business resiliency and continuity; and (v) role of disclosure.

In 2014, the BCBS conducted a review of the implementation of its operational risk principles. The review involved 60 systemically important banks (SIBs) in 20 jurisdictions and covered all 11 principles with a specific focus on the guidance related to the three lines of defence. The key findings demonstrate that, overall, banks have made insufficient progress in implementing the principles and operational risk management tools originally introduced in 2003 and revised in 2011 to varying degrees. In addition, many banks are still in the process of implementing various principles.[23]

2.3.1 Operational risk components

Operational risk includes not only common internal business events such as inadequate or failed internal processes, people and systems, but also external events such as fraud, security violation, regulatory effects or natural disasters. Furthermore, it includes legal risk, which arises when the transaction is proven to be legally inapplicable, and excludes strategic and reputational risks for the calculation of capital requirement which cannot be easily measured. Basel

---

[22] BCBS, *Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs195.pdf, June 2011.
[23] BCBS, *Review of the Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs292.pdf, October 2014.

classified the following operational risk events in relation to the banking sector that have the potential to result in substantial losses:[24]

- *Internal fraud.* For example, intentional misreporting of positions, employee theft, and insider trading on an employee's own account.
- *External fraud.* For example, robbery, forgery, cheque kiting, and damage from computer hacking.
- *Employment practices and workplace safety.* For example, worker's compensation claims, violation of employee health and safety rules, organised labour activities, discrimination claims and general liability.
- *Clients, products and business practices.* For example, fiduciary breaches, misuse of confidential customer information, improper trading activities on the bank's account, money laundering, and sale of unauthorised products.
- *Damage to physical assets.* For example, terrorism, vandalism, earthquakes, fires and floods.
- *Business disruption and system failures.* For example, hardware and software failures, telecommunication problems and utility outages.
- *Execution, delivery and process management.* For example, data entry errors, collateral management failures, incomplete legal documentation, unapproved access given to client accounts, counterparty underperformance and vendor disputes.

The BCBS, however, acknowledges that *operational risk* is a term that has a variety of meanings and therefore, for internal purposes, banks are permitted to adopt their own definitions of operational risk, provided that the minimum elements in the BCBS's definition are included.

2.3.1.1 People and system (IT) risks

People risk is a kind of operational risk and arises from incompetence or fraud that leads to potential losses. People risk designates human errors, and lack of expertise and fraud, including lack of compliance with existing procedures and policies.

People risk arises in all areas of operational risk management. Many controls are dependent on manual processes, and there can be some confusion as to how to capture the underlying people risks, such as loss of key personnel, inadequate

[24] BCBS, *Sound Practices for the Management and Supervision of Operational Risk*, www.bis.org/publ/bcbs96.pdf, February 2003.

training, or inadequate cross training.[25] Akkizidis and Kumar contended that the largest amount of losses comes from intentional activities such as fraud and unauthorised trading.[26] For instance, an internal control problem cost Dubai Islamic Bank (DIB) USD50 million in 1998 when a bank official did not conform to the bank's credit terms. This event also resulted in a run on its deposits of USD138 million, representing 7% of the bank's total deposits, in just one day. Another case related to a large unauthorised loan, of around USD242 million, made by a DIB official and involving a West African tycoon, Foutanga Dit Babani Sissoko.[27]

System risk is another important part of operational risk. The banking environment is changing rapidly, and banks are constantly having to adapt their technology, systems and processes. Such developments include the use of more highly automated technology, card payments, the growth of e-commerce, large-scale mergers and acquisitions that test the viability of newly integrated systems, the emergence of banks as very large volume service providers, the increased prevalence of outsourcing, and greater use of financing techniques that reduce market and credit risk but increase system risk.

In today's financial environment, a bank's operations are very much dependent on its technological systems and processes. Its success depends, in great part, on its ability to assemble increasingly rich databases and to make timely decisions in anticipation of client demands and industry changes. Therefore, every bank must be committed to an ongoing process of upgrading, enhancing and testing its technology, to effectively meet sophisticated client needs, market and regulatory changes, and evolving internal needs for information and knowledge management. These kinds of advanced use and dependencies on IT have also brought about a huge operational risk.

System risk also includes the following process risks:[28]

- inadequate procedures and controls for reporting, monitoring and decision-making;
- inadequate procedures for processing information, such as errors in

---

[25] P. Girling, *Operational Risk Management: A Complete Guide to a Successful Operational Risk Framework* (Hoboken, NJ: John Wiley & Sons, 2013).
[26] I. Akkizidis and S.K. Kumar, *Financial Risk Management for Islamic Banking and Finance* (Basingstoke, UK: Palgrave Macmillan, 2008).
[27] I. Warde, *Islamic Finance in the Global Economy* (Edinburgh: Edinburgh University Press, 2000).
[28] J. Bessis, *Risk Management in Banking* (Chichester, UK: John Wiley & Sons, 2002).

booking transactions and failure to scrutinise legal documentation;
- organisational deficiencies;
- risk surveillance and excess limits – management deficiencies in risk monitoring, such as not providing the right incentives to report risks, or not abiding by the procedures and policies in force;
- errors in the recording process of transactions; and
- technical deficiencies of the information system or the risk measures.

2.3.1.2 External events

Unlike other types of businesses, banks are at risk from external events that are largely outside their control. External events are synonymous with natural disasters and other similar types of emergencies that confront organisations on a daily basis. The following are examples of external events that cover most situations:

- hurricanes (consider the various categories on the Saffir-Simpson Scale);
- earthquakes (consider the possibility of the categories on the Richter Scale);
- tornadoes;
- lightning;
- flooding (consider various sources of the flooding – from a storm, to sewage backup, to ruptured water mains, to an accidental discharge of the fire suppression system);
- fire (fire within the building that damages property, and fire in nearby locations that disrupts access to the building);
- disease (consider the threat of pandemics);
- disruption of utilities (lack of electricity, phone, network, water for drinking or fire suppression, sewage, transportation and other utility services). Consider local regulations that require buildings to be closed if utilities such as water and sewage are not available. Also consider the implications if a building is functioning, but access to it is denied due to transportation disruption, hazardous material spill, marshal law, etc.;
- environmental hazards (chemical spills, pollution of air or water, etc.); and
- civil disruption (war, rioting, revolution, protests, vandalism, terrorism, etc.).

External events are prioritised and categorised on the basis of the following:

- *Type:* hurricane, earthquake, fire, etc.
- *Frequency:* how often they will occur over a period of time.
- *Duration:* if the event occurs, how long the associated processes will be unavailable.
- *Loss:* the expected expenses related to loss of buildings or equipment, the cost of renting alternate facilities, etc.

2.3.1.3 Legal risk

Legal risk, as defined by the BCBS, includes, but is not limited to, exposure to fines, penalties or punitive damages resulting from supervisory actions, as well as private settlements. The inclusion of legal risk as part of a broader notion of operational risk poses some measurement difficulties. This might be due to difficulty in defining its nature, because legal risk has an unpredictable effect, even though it can be the determinant of losses that banks have to incur.

Confusion also revolves around the various meanings of the term *legal risk*, which depends on the specific context and the practical concerns of the persons employing it. Furthermore, Hadjiemmanuil suggests that there are different ways in which loss may arise, which are often classified under the domain of legal risk. Thus, the loss may be attributable to one or more of the following:[29]

- *Legally flawed actions of the bank or its employees and agents.* As a result, the bank either incurs direct liabilities or becomes unable to ascertain in law a certain right in order to protect its interests.
- *Legal uncertainty.* This is an external parameter that does not depend on any fault of the bank itself. It affects even the most diligently and prudently run institutions. Sometimes, the law is intentionally expressed in general and abstract terms. Because of informational constraints, it is impossible to draft complete rules that make special provision for each and every eventuality.
- *Legal uncertainties and financial innovation.* Innovation, however, is a significant contributor to legal risk as well. The adoption of new and complex transactional techniques, in particular, often comes with significant legal uncertainty; hence, it can expose banks to potentially catastrophic risk.

---

[29] C. Hadjiemmanuil, "Legal Risk and Fraud: Capital Charges, Control and Insurance", in C. Alexander (ed.), *Operational Risk: Regulation, Analysis and Management* (London: Prentice Hall–Financial Times, 2003).

- *Country-specific legal perils and costs.* The term *legal risk* can also refer to the relative risk of doing business in different countries, as a function of the quality of their legal system. Jurisdictions can be compared by reference to the effects of their laws and judicial systems in terms of increasing or attenuating the risk.

2.3.1.4 Reputational risk

A solid reputation is important for all types of organisations. It is especially important for financial institutions, because the nature of banking revolves around trust. It could be argued that protecting a reputation is the most significant risk management challenge today for all financial institutions. Reputational risk, as defined by the BCBS,[30] is the risk arising from negative perception on the part of customers, counterparties, shareholders, investors, account holders, market analysts, and other relevant parties or regulators that can adversely affect a bank's ability to maintain existing, or establish new, business relationships and continued access to sources of funding. Reputation is perceived as an intangible asset, and is difficult to measure and quantify. Consistently strong earnings, a trustworthy board of directors and senior management, loyal and contented branch employees, and a strong customer base are just a few examples of positive factors that contribute to a bank's good reputation.

The advantages of having a good reputation are enormous. Establishing a strong reputation provides a direct competitive advantage over an organisation's counterparts. A good reputation strengthens a company's market position and increases shareholder value. It can even help attract top talent and assist in employee retention. In short, reputation is a prized asset, but it is one of the most difficult to protect. In the banking industry, a reputable bank may encounter various issues that could significantly harm, or even destroy, its brand name in a short period of time. For example, non-compliance with and violations of laws could lead to issuance of civil money penalties or formal enforcement actions, which would be published in the local or national media and could ultimately damage the institution's image.

Reputational risk remains one of the more elusive risks because of the difficulty in measuring it, as well as a lack of understanding of the mechanisms that generate this risk. Reputational risk is multidimensional and reflects the perception of other market participants. Furthermore, it exists throughout the organisation. Exposure to reputational risk is essentially a function of the adequacy of the bank's internal

---

[30] BCBS, *Enhancements to the Basel II Framework*, www.bis.org/publ/bcbs157.pdf, July 2009.

risk management processes, as well as of the manner and efficiency with which management responds to external influences on bank-related transactions.

Reputation risk management has three main building blocks:[31]

1. *Good corporate governance:* To guide conduct and actions in achieving their vision, values, goals and strategies, as well as meeting stakeholder requirements and expectations; and to ensure robust oversight of their conduct and actions.
2. *Effective reputation risk management process:* To prevent any perceived risks from developing into direct threats to the institution's reputation.
3. *Adequate management of reputation events:* To develop a systematic and comprehensive approach to managing reputation events so that banks' management can, as soon as possible, be informed of and prepared for such events and be able to take proper measures to restore the institution's reputation and minimise any damage so caused.

2.4 Components of Operational Risk in Islamic Banks

While all the risks mentioned above are broadly applicable to Islamic banks, there are some additional dimensions of risk, which are covered in this section.

As mentioned earlier, the IFSB capital adequacy standards have adopted BCBS's definition of operational risk, with some changes to reflect the unique nature of Islamic banking operations. These standards define operational risk as the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events, which includes, but is not limited to, legal risk and Sharī'ah non-compliance risk (The types of risk are explained in detail in the following subsections). This definition excludes strategic and reputational risk.[32] Similar to conventional banks, Islamic banks are exposed to "a range of operational risks that could materially affect their operations".[33] Operational risk, if not properly managed, could be significant in Islamic banks due to the specific contractual features of their mode of finance and the underdeveloped Islamic legal infrastructure. Its importance is also due to the nature of the business,

---

[31] Hong Kong Monetary Authority, "Reputation Risk Management", *Supervisory Policy Manual*, Vol. 1, December 2008.
[32] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.
[33] IFSB-4: *Disclosures to Promote Transparency and Market Discipline for IIFS*, December 2007.

which must be conducted as per Sharī'ah rules and principles. Khan and Ahmed showed that operational risk could be quite prominent in Islamic banks, if not properly managed.[34]

Broadly, the unique features of operational risk in Islamic banking can be grouped into three main categories: general risks, fiduciary risks and SNCR.

2.4.1 General risks

General risks are those risks that are consequential upon various kinds of banking operations conducted by Islamic banks that are common to all financial intermediaries arising from people, processes and systems, as well as from external events. By this definition, general risks are similar to those faced by conventional banks. However, the nature of financing products in Islamic banking may give rise to additional forms of operational risk in contract drafting and execution that are specific to such products. Similarly, uncertainty in laws, regulations and legal actions pertaining to the principles of Sharī'ah may raise enforceability concerns. The two main elements that have an effect on and raise the issue of enforceability of Sharī'ah-based contracts are: (a) the documentation involved in the transaction, and the terms and conditions of the contract; and (b) the globalisation and ambiguous relationship between Islamic banks and the Western-style banking system and legal infrastructure.[35] Ambiguity in the tax regimes for Islamic finance transactions also remains a persistent problem in some jurisdictions. In jurisdictions where such problems exist, both Islamic banks and their RSAs should consider appropriate measures to mitigate such risk. Moreover, there is also an element of adequately changing IT and accounting systems to incorporate the unique features of Sharī'ah-compliant products and services.

The dimension of people risk in Islamic banks is understandably wider than in conventional ones, since Islamic banks' personnel are required to be well-versed in both conventional and Islamic banking products and should have the right blend of knowledge of finance and understanding of Sharī'ah principles. For example, people risk can occur in a *mushārakah* or *muḍārabah* financing contract when an employee of the Islamic bank (acting as the capital provider for a *muḍārabah*, or the partner in a *mushārakah*, financing arrangement) does not carry out adequate due diligence before the release of the funds. Similarly, failure

---

[34] T. Khan and A. Ahmed, *Risk Management: An Analysis of Issues in the Islamic Financial Industry*, Occasional Paper No. 5 (Jeddah: IRTI/IDB, 2001).
[35] A.M. El Tiby', *Islamic Banking: How to Manage Risk and Improve Profitability* (Hoboken, NJ: John Wiley & Sons, 2011).

to assess the soundness and reliability of the entrepreneur or the partner due to a lack of technical expertise on the part of the staff will also have implications for operational risk.[36]

While, on the one hand, people risk can be seen as prominent in equity-based financing arrangements of Islamic banks, or in those transactions whose execution involves a series of steps, the ethics-based nature of the Islamic banking business model could help to contain such risk which otherwise might be faced by a conventional institution due to unethical business conduct, fraud or similar types of malpractice. It may be possible that, due to their stringent recruitment processes, Islamic banks are less likely to have "general operational risks", such as internal fraud and corruption, because of their employees' religious motivations. A number of studies on the relation between religion and misbehaving have demonstrated this relationship.[37] There is, however, no study on the Islamic banking perspective, and generally no measurement tool has been developed for gauging people risk in the banking sector.

Overall, general risk is assumed to be covered under the operational risk parameters that apply to conventional and Islamic banks alike.

2.4.2 Fiduciary risk

Fiduciary risk is directly related to the unique relationship between Islamic banks and the investment account holders (IAH), which is based on risk-sharing principles. The risk may arise when investing profit-sharing investment account funds in a high-risk activity, or from mismanagement of those funds. Islamic banks are liable for losses arising from their negligence, misconduct or breach of their investment mandate. Thus, the risk of losses that arises from such events is characterised as a fiduciary risk. In other words, fiduciary risk is an indication of failure to "perform in accordance with explicit and implicit standards applicable to their fiduciary responsibilities".[38] The indication of such failure can be seen from the high degree of their earnings volatility. As a result of losses, Islamic banks may become insolvent and, as a consequence, be unable either: (a) to meet the demands of current account holders for repayment of their funds, or (b) to protect the interests of its IAH.

---

[36] H. Izhar, "Identifying Operational Risk Exposures in Islamic Banking", *Kyoto Bulletin of Islamic Area Studies*, Vol. 3, No. 2, 2010, pp. 17–53.

[37] R. La Porta, F. Lopez-de-Silanes, A. Shleifer and R. Vishny, "The Quality of Government", *Journal of Law, Economics, and Organization*, Vol. 15, No. 1, April 1999, pp. 222–79; R.M. Stulz and R. Williamson, "Culture, Openness, and Finance", *Journal of Financial Economics*, Vol. 70, 2003, pp. 313–49; R.J. Barro and R.M. McCleary, "Religion and Economic Growth across Countries", *American Sociological Review*, Vol. 68, No. 5, 2003, pp. 760–81.

[38] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.

The consequences of fiduciary risk can be significant, particularly if an Islamic bank's reputation starts to be questioned by its customers. A dent in a bank's reputation can create panic among the IAH, who may decide to withdraw their funds. It has been argued that fiduciary risk can have implications for the bank's cost of and access to liquidity. If a bank is declared insolvent, which is the worst case, it is unlikely to meet the demands of its fund providers. Hence, a sound level of solvability would help Islamic banks enhance their credibility in the eyes of the fund provider.[39] A major loss of funds or insolvency may result in legal action, which can lead to a financial loss in the form of penalties or compensation payments. Similarly, the inability to meet fiduciary responsibilities can have a negative impact on the market price of shareholders' equity and on the bank's costs and access to liquidity.

The aspect of fiduciary risk faced by Islamic banks is covered under the broader rate-of-return framework, which has implications for adjustments in the denominator of the capital adequacy ratio as outlined in various IFSB standards on capital adequacy (e.g. see section 3.4 of IFSB-15).

2.4.3 Sharī'ah non-compliance risk

The IFSB defines the SNCR as the risk arising from Islamic banks' failure to comply with the Sharī'ah rules and principles determined by the Sharī'ah board or the relevant body in the jurisdiction in which the Islamic bank operates.[40] The failure to comply with such principles will result in the transaction being cancelled, and hence the income cannot be recognised. IFSB-1 stipulates that Islamic banks are expected to:

- maintain an adequate system and control, which includes the assigning of a Sharī'ah supervisory board;
- ensure that all contract documentation, including all terms and conditions that govern the relationship between the bank and the customer, are fully in compliance with Sharī'ah rules and principles; and
- organise an independent Sharī'ah compliance review by an adequate third party on an annual basis.

---

[39] Z. Iqbal and A. Mirakhor, *An Introduction to Islamic Finance: Theory and Practice* (Singapore: John Wiley & Sons (Asia) Pte Ltd, 2007).

[40] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.

Sharī'ah compliance is a consistent process which should be maintained at all times, and such compliance requirements must permeate throughout the Islamic bank's organisation, products and activities. On both the fund-seeking and financing sides, Islamic banks must ensure that their operations are compliant with Sharī'ah requirements.[41] Failure to comply with Sharī'ah rules and principles will expose Islamic banks, in extreme cases, to reputation and insolvency risks. Customers will lose confidence and trust in the institution, and subsequently withdraw their funds from and cancel their contracts with the bank, because a majority of their fund providers use Sharī'ah-compliant banking services as a matter of principle.[42] The Islamic bank, in addition, will lose any income that is generated from transactions or contracts that are undertaken in a Sharī'ah non-compliant manner as they are now deemed as void. (For further details, see Section 3 of this paper.) There is also an additional risk dimension arising from the various types of contracts used by Islamic banks, because of the different rights and obligations applying in the secular law and in Sharī'ah *law* to instruments such as warranties.

However, it should be noted that reputational risk, including that relating to Sharī'ah non-compliance, falls outside both the Basel II and IFSB definitions of operational risk for capital adequacy purposes.[43]

2.5 Capital Adequacy and Measurement of Operational Risk for Capital Charge

As highlighted in section 1.2 earlier, the capital adequacy requirement for banking institutions seeks to ensure that their risk exposures are backed by an adequate amount of high-quality capital that can absorb losses on a going-concern basis, thus ensuring a bank's ability to meet its obligations as they fall due. The requirements set by the RSAs also seek to protect depositors and other senior creditors in a liquidation scenario by promoting an additional cushion of assets that can be used in meeting their claims. Moreover, a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability.[44]

---

[41] IFSB-15: *Revised Capital Adequacy Standard for IIFS*, December 2013.
[42] IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005, Section 7.2, "Definition and Profiles of Operational Risk", paragraph 122 ff.
[43] S. Archer and A. Haron, "Operational Risk Exposures of Islamic Banks", in S. Archer and R.A.A. Karim (eds), *Islamic Finance: The Regulatory Challenge* (Singapore: John Wiley & Sons (Asia) Pte Ltd, 2007).
[44] P. Athanasoglou, S. Brissimis and M. Delis, "Bank-specific, Industry-specific and Macroeconomic Determinants of Bank Profitability", *Journal of International Financial Markets, Institutions, and Money*, Vol. 18,

At the macro level, capital adequacy requirements are an important tool used by RSAs to ensure the stability of the banking system as a whole. Mili et al. state that the capital adequacy requirement is an important measure of safety and soundness because capital is considered as being a safety margin capable of absorbing potential losses.[45] In fact, as a consequence of the US sub-prime crisis, many banks faced problems in meeting the required level of capital due to the inadequacy of capital instruments to absorb losses. Subordinated debt instruments, considered as a part of Tier 2 in Basel II, proved especially incapable of absorbing losses in distress situations. In most cases, subordinate debt holders were bailed out by governments using taxpayers' funds; that is, while several financial institutions failed, causing chaos in the financial world, many other large institutions that were considered "too big to fail" were bailed out by their respective sovereigns. In the aftermath of that experience, the BCBS changed its capital adequacy requirements – for example, it introduced new requirements for capital instruments and bail-in features therein, and strengthened risk measurement for credit and market risk – in order to provide financial institutions with a greater and more reliable cushion during any future distress.

The capital adequacy requirement now commonly known as Basel I was first introduced by the BCBS in 1988.[46] Initially, the requirement was intended only to cover banks' credit risks. Later, in January 1996, the BCBS issued the Market Risk Amendment to the Capital Accord (or Market Risk Amendment), to take effect at the end of 1997. This was designed to incorporate within the Accord a capital requirement for the market risks arising from banks' exposures to foreign exchange, traded debt securities, equities, commodities and options. However, over the years, due to the growing vulnerability of the financial system, the BCBS extended the capital adequacy requirement in order to cater for credit and market risk as well as the newly introduced operational risk in 2004 under Basel II.[47] The new capital framework used a "three pillars" concept: (1) minimum capital requirements, (2) supervisory review, and (3) market discipline. The regulatory capital requirement is deemed as "Pillar 1", while "Pillar 2" provides – among other principles – guidance on the supervisory review of internal controls and risk management structure of the regulated banking institutions. It requires banks to have internal systems and models to evaluate their capital requirements in parallel with the regulatory framework and integrating the banks' particular risk

---

[45] M. Mili, J.M. Sahut and H. Trimeche, *Determinants of the Capital Adequacy Ratio of a Foreign Bank's Subsidiaries: The Role of the Interbank Market and Regulation of Multinational Banks*, IPAG Working Paper (2014), p. 366.
[46] BCBS, *International Convergence of Capital Measurement and Capital Standards*, www.bis.org/publ/bcbs04a.pdf, July 1988.
[47] BCBS, *International Convergence of Capital Measurement and Capital Standards*, www.bis.org/publ/bcbs107.pdf, June 2004.

profile. Banks must also integrate the types of risks not covered (or not fully) by Pillar 1.

Under Pillar 2, RSAs are also expected to see that the requirements of Pillar 1 are effectively respected, and to evaluate the appropriateness of the internal models set up by the banks. If the RSAs consider that capital is not sufficient, they can take various actions to remedy the situation. Pillar 2 gives RSAs a wider set of "tools" compared to Pillar 1 for dealing with risks such as systemic risk, pension risk, concentration risk, strategic risk, reputational risk, liquidity risk and legal risk, which the BCBS combines under the title of "residual risk". The RSAs can require a bank to raise its capital ratios and/or to adopt improvements in its risk management process and internal controls, if deemed necessary by the RSA. Stress testing is also an important risk management tool that is used by banks as part of their internal risk management. Banks are commonly required to conduct stress tests as part of Pillar 2, using extreme but plausible scenarios. All these considerations are taken into account by the banks when preparing their Internal Capital Adequacy Assessment Process (ICAAP). Pillar 3 concerns market discipline, and the requirements are related to transparency in the banks' operations. It requires banks to provide adequate and timely disclosures to stakeholders on their operations, including their internal risk management, audit and compliance systems.

Two frequently discussed concepts in terms of capital requirements for banks are regulatory capital and economic capital. *Regulatory capital*, which is specified by regulators, establishes an institution's minimum capital requirement based on the capital charge on its credit, market and operational risk exposures. On the other hand, *economic capital* is defined as the capital that a bank must hold to protect itself against insolvency with a chosen level of certainty over a given period of time. Fontnouvelle et al. define economic capital as "the amount that bank management believes it should hold to reflect the risks arising from the various positions and activities of banks".[48] And Kilavuka defines it as "an estimate of the amount of capital that is required to cover and protect the shareholders from potential (unexpected) economic losses at a selected confidence level, over a given time horizon".[49] Economic capital may be assigned to a certain kind of risk or to individual business lines or activities. The ICAAP facilitates the process of

[48] P. de Fontnouvelle, V. Garrity, S. Chu and E. Rosengren, *The Potential Impact of Explicit Basel II Operational Risk Capital Charges on the Competitive Environment of Processing Banks in the United States* (Boston: Federal Reserve Bank of Boston, 2005).
[49] M.I. Kilavuka, "Managing Operational Risk Capital in Financial Institutions", *Journal of Operational Risk*, Vol. 3, Spring 2008, pp. 67–83.

identifying economic capital, which will determine whether there is a need for any additional capital over and above those required by the Pillar 1 requirements.

2.5.1 Calculation of operational risk capital charge

The measurement and regulation of operational risk is quite distinct from other types of banking risks. Operational risk deals mainly with tail events rather than central projections or tendencies, reflecting abnormal, rather than normal, behaviour and situations. Thus, the exposure to operational risk is less predictable and even harder to model, because extreme losses are one-time events of large economic impact without historical precedent. While some operational risk exposure follows from frequent but stochastic patterns whose high frequency caters to quantitative measures, there are many other types of operational risk for which no historical data could be available to support any objective assessmet, thus requiring subjective judgment and estimation. In addition, the diverse nature of operational risk from internal or external disruptions to business activities and the unpredictability of their overall financial impact complicate systematic measurement and consistent regulation. Setting relevant and reliable indicators is therefore a challenge for operational risk. This is why the revised document on operational risk management[50] issued by the BCBS requires the RSAs to conduct, directly or indirectly, regular independent evaluations of a bank's policies, processes and systems related to operational risk. RSAs should also ensure that there are appropriate mechanisms in place that allow them to remain apprised of developments at a bank. The document also provides a list of tools as examples that may be used for identifying and assessing operational risk, such as audit findings, internal loss data collection and analysis, external data collection and analysis, risk assessments, business process mapping, risk and performance indicators, scenario analysis and comparative analysis.

In the 2001 working paper, three methods for calculating operational risk capital charges were proposed, based on increasing sophistication and risk sensitivity: BIA, TSA and AMA. Subsequently, in 2004, Basel II introduced an overt treatment of operational risk. For the first time, banks were expected to hold separately identified regulatory capital for operational risk (Pillar 1); they would face additional supervisory scrutiny of their risk management (Pillar 2); and they would be expected to disclose the size of the capital charge for operational risk, as well as the technique used to calculate it (Pillar 3).[51] Basel II maintained the earlier

---

[50] BCBS, *Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs195.pdf, June 2011.
[51] BCBS, *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, www.bis.org/publ/bcbs118.pdf, November 2005.

definition and proposed calculation methods for operational risk. In addition, it proposes a hierarchy of operational risk qualitative requirements, depending on the methodology used to calculate regulatory capital. At a minimum, it encourages banks to comply with its guidance on *Sound Practices for the Management and Supervision of Operational Risk*. Despite the criticisms about the definition and opaque approach of the capital charge calculation methods for operational risk, this framework has helped banks to realise the importance of managing operational risk. Just as in the case of market and credit risks, the banking industry has been pushed in the direction of better controls of operational risk by this regulatory regime.

Depending on their nature, size and complexity, and the risk profile of their activities, banks are expected to develop their own sound operational risk governance, while simultaneously maintaining equity capital against operational risks. It has become the bank's responsibility to add transparency about its operational risk profile by quantitative assessment of risks using internal loss data, external loss data, scenario analysis using expert judgment, and key risk indicators. For the capital charge of operational risk, the Basel framework proposed three methods of measuring operational risks: BIA, TSA and AMA, as mentioned earlier. The two simplest methods, BIA and TSA, define the operational risk capital of a bank as a fraction of its gross income. The gross income is used as a proxy to calculate the capital charge for operational risks. Meanwhile, the AMA allows banks to develop their own model for assessing the regulatory capital. The following section provides details of the proposed three methods and their respective approaches to capital requirements for operational risk.

2.5.1.1 The basic indicator approach (BIA)

The BIA sets the capital charge for operational risk to a single indicator that serves as a proxy for the bank's overall risk exposure, which is a fixed percentage of its gross income. However, it has some drawbacks leading to counterproductive management impulses. For example, when a bank experiences a decline in its gross income because of the idiosyncratic and market-wide stress event that may lead to operational risk losses, its operational risk capital falls rather than increases. Thus, increased income resulting from good risk management leads to the negative effect of an increase in the required capital charge, while a drop in a bank's income has the effect of lowering the capital charge.

According to this approach, banks must hold capital for operational risk equal to the average over the previous three years of a fixed percentage (donated alpha) of positive annual gross income. A figure for any year in which annual gross

income is zero or negative should be excluded from both the numerator and denominator when calculating the average. Here, gross income is defined as net interest income plus net non-interest income. The charge may be expressed as shown in Figure 1.

Figure 1: BIA Approach[52]

$$K_{BIA} = \left[\sum \left(GI_{1...n} \times \alpha\right)\right] / n$$

where:

K_{BIA} = the capital charge under the Basic Indicator Approach

GI = annual gross income, where positive, over the previous three years

N = number of the previous three years for which gross income is positive

α = 15%, which is set by the Committee, relating the industry wide level of required capital to the industry wide level of the indicator.

Source: BCBS (2006).

2.5.1.2 The standardised approach (TSA) or alternative standardised approach (ASA)

Under TSA, capital charges are set for different lines of business as specified by the RSAs. The differences in business and organisational structures in banks must, however, be taken into account when applying this approach in order to establish whether a bank is adequately represented by the specified business lines. Within each business line, the capital charge is a selected indicator of operational risk times a fixed percentage ("beta factor"). Both the indicator and the beta factors may differ across business lines.

According to this approach, banks' activities are divided into eight business lines: (a) corporate finance, (b) trading and sales, (c) retail banking, (d) commercial banking, (e) payment and settlement, (f) agency services, (g) asset management, and (h) retail brokerage.

In order to qualify for use of the standardised approach, a bank must satisfy its RSAs that, at a minimum:

- its board of directors and senior management, as appropriate, are

[52] The referred formula has been taken from the referenced BCBS document. Apparently, the letter forms "N" and "n" have been used interchangeably in this formula.

actively involved in the oversight of the operational risk management framework;

- it has an operational risk management system that is conceptually sound and implemented with integrity; and
- it has sufficient resources to use the approach in its major business lines as well as in the control and audit areas.

The capital charge for each business line is calculated by multiplying gross income by a factor (denoted beta) assigned to the business line. Beta serves as a proxy for the industry-wide relationship between the operational risk loss experience for a given business line and the aggregate level of gross income for that business line. The total capital charge is calculated as the three-year average of the simple summation of the regulatory capital charge across each of the business lines in every year. The total capital charge may be expressed as shown in Figure 2.

Figure 2: TSA Approach

$$K_{TSA} = \left\{ \sum_{\text{years } 1\text{-}3} \max \left[\sum (GI_{1\text{-}8} \times \beta_{1\text{-}8}), 0 \right] \right\} \Big/ 3$$

where:

K_{TSA} = the capital charge under the Standardised Approach

$GI_{1\text{-}8}$ = annual gross income in a given year, as defined above in the Basic Indicator Approach, for each of the eight business lines

$\beta_{1\text{-}8}$ = a fixed percentage, set by the Committeee, relating the level of required capital to the level of the gross income for each of the eight business lines. The values of the betas are detailed below.

Business Lines	Beta Factors
Corporate finance (β_1)	18%
Trading and sales (β_2)	18%
Retail banking (β_3)	12%
Commercial banking (β_4)	15%
payment and settlement (β_5)	18%
Agency services (β_6)	15%
Asset management (β_7)	12%
Retail brokerage (β_8)	12%

Source: BCBS (2006).

At the RSAs' discretion, a bank may use the ASA. Under the ASA, the operational risk capital charge/methodology is the same as for TSA except for two business lines – retail banking and commercial banking. For these business lines, loans and advances — multiplied by a fixed factor, "m" — replace gross income as the exposure indicator. The betas for retail and commercial banking are unchanged from TSA. Once a bank has been allowed to use the ASA, it will not be allowed to

revert to the use of TSA without permission from its RSAs. The ASA operational risk capital charge for retail banking (with the same basic formula for commercial banking) can be expressed as shown in Figure 3.

Figure 3: ASA Approach

$K_{RB} = \beta_{RB} \times m \times LA_{RB}$

where

K_{RB} is the capital charge for the retail banking business line

β_{RB} is the beta for the retail banking business line

LA_{RB} is total outstanding retail loans and advances (non-risk weighted and gross of provisions), averaged over the past three years

m is 0.035

Source: BCBS (2006).

2.5.1.3 The advanced measurement approach (AMA)[53]

The AMA allows banks to develop their own model for assessing the regulatory capital that covers their yearly operational risk exposure within a confidence interval of 99.9%. A bank applying the AMA will be subject to a period of initial monitoring by its RSA in order to determine whether the approach is credible and appropriate. It must assure its RSAs that, at a minimum, the following qualitative and quantitative criteria for the use of AMA for the calculation of capital requirement are met.

Qualitative standards include:

- an independent operational risk management function that is responsible for the design and implementation of the bank's operational risk management framework;
- close integration of the bank's internal operational risk management system into its day-to-day risk management process;
- regular reporting of operational risk exposure and loss experience to management in the business unit, senior management and the board of directors;
- good documentation of the bank's operational risk management system;
- regular reviews of the operational risk management processes and measurement systems by internal and/or external auditors; and
- validation of the operational risk measurement system by external

[53] The BCBS is currently considering removing the AMA approach from the global regulatory framework.

auditors and/or the supervisory authority to verify that the internal validation processes are operating in a satisfactory manner, and the assurance that data flows and processes associated with the risk measurement system are transparent and accessible.

Quantitative standards include:

- the AMA soundness standard;
- detailed criteria describing a series of quantitative standards that will apply to internally generate operational risk, as defined by the committee;
- the bank's tracking of internal loss data according to the criteria set out by the committee;
- use of relevant external data by the bank's operational risk management system, especially when there is reason to believe that the bank is exposed to infrequent, yet potentially severe, losses;
- the bank's use of scenario analysis of experts in conjunction with external data to evaluate its exposure to high-severity events; and
- the bank's firm-wide risk assessment methodology capturing key business environment and internal control factors that can change its operational risk profile.[54]

Under AMA, banks are allowed to recognise the risk-mitigating impact of insurance in the measures of operational risk used for regulatory minimum capital requirements. The recognition of insurance mitigation will be limited to 20% of the total operational risk capital charge calculated under AMA. Partial use of the AMA is permitted for some of the bank's operations, with the following conditions:

1. All operational risk of the bank's global, consolidated operations must be captured.
2. All the bank's operations that are covered by AMA should meet the qualitative criteria for using AMA, while those parts of its operations that use one of the simpler approaches should meet the qualifying criteria for that approach.
3. The supervisor is provided with a plan specifying the timetable for rolling out the AMA across all its operations.

[54] BCBS, *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, www.bis.org/publ/bcbs118.pdf, November 2005.

2.5.2 Recent update on calculation of operational risk by simpler approaches

In the wake of the Global Financial Crisis, while the BCBS was updating the capital adequacy framework, some concerns were raised about the insufficiency and incapability of using the simpler methods for estimating operational risk. Despite an increase in the number and severity of operational risk events during and after the financial crisis, capital requirements for operational risk have remained stable, or even fallen, for the standardised approaches. This indicates that the existing set of simple approaches for operational risk (BIA and TSA, with its variant the ASA) do not correctly estimate the operational risk capital requirements of a wide spectrum of banks. The insufficiency and incapability of simpler approaches stem mainly from the use of gross income as a proxy indicator for operational risk exposure, based on the assumption that banks' operational risk exposure increases linearly in proportion to revenue. The clear evidence is that when a bank experiences a decline in its gross income due to stress events (including operational risk losses), its operational risk capital requirement falls when it should be increasing.

Based on its fundamental review of the simpler approaches for estimating operational risk, the BCBS found that the current standardised framework comprising the BIA, TSA and ASA is, on average, undercalibrated, especially for large and complex banks, and that AMA capital charges are often benchmarked against this undercalibrated capital requirement.

In October 2014, the BCBS published a consultative paper on revisions to the simpler approaches for estimating operational risk.[55] In taking into account the weaknesses of the simpler approaches, the BCBS aims to refine the operational risk proxy indicator by replacing gross income with a superior indicator, and to improve calibration of the regulatory coefficients. The BCBS proposed the business indicator (BI) as a replacement for gross income (GI). The new proxy of BI helps to enhance predictive power, as compared with GI and other potential indicators, stemming from its ability to capture a bank's volume of business and, hence, the associated operational risk. The BI (details of indicators are given in Figure 4) comprises three macro-components of a bank's income statement – namely, the interest component, the services component and the financial component. The BCBS has also recalibrated the current regulatory coefficients in the BIA (alpha) and TSA (betas) based on the value of BI, because it was

[55] BCBS, *Operational Risk: Revisions to the Simpler Approaches, Consultative Paper*, www.bis.org/publ/bcbs291.pdf, October 2014.

observed that capital needs for operational risk increase in a non-linear fashion with the bank's size. At the same time, the BCBS also started a review of the AMA for operational risk.

Figure 4: Details of Indicators of BI

Component of a bank's income statement	Gross Income items	Business Indicator items
Interest	Interest Income – Interest Expense	Absolute value (Income – Expenses)
Services	Fee Income – Fee Expense + Other Operating Income	Fee Income + Fee Expense + Other Operating Income + Other Operating Expense
Financial	Net P&L on Trading Book	Absolute value (Net P&L on Trading Book) + Absolute Value (Net P&L on Banking Book)
Other	Dividend Income	Not included

Source: BCBS, Operational Risk: Revisions to the Simpler Approaches, Consultative Paper, *www.bis.org/publ/bcbs291.pdf, October 2014.*

Following analysis of the AMA and feedback on the 2014 consultative paper, the BCBS issued in March 2016 a new consultative paper, *Standardised Measurement Approach for Operational Risk*,[56] proposing the standardised measurement approach (SMA) as a single non-model-based method for estimating operational risk capital. The new proposed approach combines a simple standardised measure of operational risk (mentioned in the 2014 consultative paper) and an AMA approach, with the bank-specific loss data providing a sufficiently risk-sensitive measure of operational risk. It is assumed that the new approach helps the comparability of risk-based capital measures and reduces model complexity in relation to operational risk. The BCBS is therefore proposing to remove the AMA from the regulatory framework.

The new proposed SMA combines the BI, which was proposed in a 2014 consultative paper as a simple financial statement proxy of operational risk exposure, and bank-specific operational loss data (if bank BI size is more than €1 billion). The structure of the BI has since been revised to avoid penalising certain business models, such as those based on the distribution of products bought from third parties and those based on high interest margins. Adjustments have also been made to address issues related to the treatment of financial and operating leases. In the new proposal, a bank must determine the three-year

[56] BCBS, *Standardised Measurement Approach for Operational Risk*, www.bis.org/bcbs/publ/d355.pdf, Consultative paper, March 2016.

average of the BI as the sum of the three-year average of its components:

$$BI = ILDC_{AVG} + SC_{AVG} + FC_{AVG}$$

BI = Business indicator
ILDC = Interest, lease and dividend component
FC = Financial component

Avg = Average of the items at the years: t, t-1 and t-2

Although the BI is stable and comparable across banks, business volume is only one factor that influences exposure to operational risk. BCBS found, with its quantitative impact study (QIS), that significant differences in the risk profile of medium to large banks cannot be fully accounted for by an approach that relies only on financial statement proxies.

Under the SMA, banks are divided into five buckets, based on the size of their BI. The operational risk capital for small banks (BI range is less than €1 billion) is based on BI under bucket 1. An additional metric has been added to BI through the Internal Loss Multiplier, which improves the risk sensitivity of the SMA for medium and large banks. The Internal Loss Multiplier is based on the internal loss experience of a bank. It is used for buckets 2–5, in which most banks are medium to large in size.

The structure of the buckets, as well as their corresponding coefficient values, are shown in Table 1. According to BCBS, the operational loss exposure increases more than proportionally with the BI, and thus the calibration in BI compared to the 2014 consultative paper includes progressively increasing marginal coefficients for the BI.

Table 1: Coefficients of BI

Bucket	BI Range	BI Component
1	€0 to €1 bn	0.11*BI
2	€1 bn to €3 bn	€110 m + 0.15(BI – €1 bn)
3	€3 bn to €10 bn	€410 m + 0.19(BI – €3 bn)
4	€10 bn to €30 bn	€1.74 bn + 0.23(BI – €10 bn)
5	€30 bn to +∞	€6.34 bn + 0.29(BI – €30 bn)

Source: BCBS, *Standardised Measurement Approach for Operational Risk*, www.bis.org/bcbs/publ/d355.pdf, March 2016.

On completing the second consultation phase, the BCBS intends to publish the final standard within an appropriate time frame and provide sufficient time for implementation.

A study conducted on the implications of the first proposal for an operational risk framework[57] highlights that it would likely increase the capital requirement for operational risk. Based on a sample of 29 global banks, the study notes that operational risk capital would be on average 55% higher under the standardised approach. As the operational risk requirement is lower for smaller banks than for larger ones, the relatively small size of Islamic banks will not result in significantly higher operational risk requirements. According to a QIS done by the BCBS, the impact of the new operational risk framework will vary from bank to bank and may lead to an increase in minimum capital requirements for some banks. However, these observations are subject to the final rules issued by the BCBS.

2.6 Application of the Capital Adequacy Requirement for Islamic Banks

Islamic banks offer various types of accounts for raising funds, including current accounts, restricted and unrestricted profit-sharing investment accounts (PSIA), *wadīʿah*-based or commodity *murābaḥah* accounts, etc. Overall, however, PSIA remain the largest source of funds, constituting 64.4% of total funding generated by Islamic banks in 11 jurisdictions.[58] Under unrestricted PSIA, an Islamic bank has full discretion to utilise its funds for the provision of finance and/or investments, as investment account holders provide funds without specifying any restrictions. For restricted PSIA, on the other hand, the mandate is limited to financing and/or investment activities agreed between the IIFS and restricted investment account holders (RIAH) as to where, how and for what purpose the funds are to be invested. Any losses generated from assets funded by these accounts may, in principle, be contractually borne by the IAH and may not impact the IIFS's capital.

Some observers believe that Islamic banks are less vulnerable than conventional banks to economic distress, due to the fact that most assets of Islamic banks are backed by profit/loss-sharing accounts,[59] which by nature are risk absorbent. Some researchers have even suggested that the minimum capital adequacy requirement could be less relevant in Islamic banks, because the profit/loss-sharing contract helps to reduce the overall risk of investment faced by the banks.[60]

---

[57] PricewaterhouseCoopers, *Regulatory Brief: Operational Risk Capital*, https://www.pwc.com/us/en/financial-services/regulatory-services/publications/assets/fs-reg-brief-operational-risk-capital.pdf, November 2014.
[58] IFSB, Prudential and Structural Islamic Financial Indicators (PSIFIs), published at IFSB website, 27 April 2015.
[59] M. Abdul Karim, M. Kabir Hassan, T. Hassan and Mohamad Shamsher, "Capital Adequacy and Lending and Deposit Behaviors of Conventional and Islamic Banks", *Pacific-Basin Finance Journal*, Vol. 28, 2014, pp. 58–75.
[60] L.D. Pellegrina, *Capital Adequacy Ratios, Efficiency and Governance: A Comparison between Islamic and Western Banks*, Working Paper No. 20070402 (Università degli Studi di Milano-Bicocca, Dipartimento di Statistica, 2007).

However, due to market imperfections and information asymmetries, including the use of debt-based contracts on the financing side and smoothing practices for PSIA adopted by Islamic banks, this relationship is far from perfect.[61] According to a recent study by the International Monetary Fund, the differences between Islamic banks and conventional ones are relatively small, as many conventional banking products on both sides of the balance sheet can be redrafted as Sharī'ah-compliant products. Similarly, while Islamic banks differ in their level of risk-sharing features, risk-sharing contracts on the financing side have become the exception rather than the rule, with most financing offered in the form of *murābaḥah* contracts (cost-plus financing). Moreover, PSIA do not behave very differently from conventional deposits, as the rate of return on PSIAs is closely pegged to these deposits.[62]

Balancing the aforementioned views, it may be observed that the level of risk sharing by Islamic banks can differ on both sides of the balance sheet, which has consequences for their capital adequacy calculations. From a regulatory perspective, capital adequacy requirement is an essential safety net for Islamic banks, due to the specific risks of their products and the nature of Islamic banks as intermediaries, which, nevertheless, requires some adjustments due to the consideration of PSIAs as outlined by Smolo and Hassan,[63] Hassan and Chowdhury,[64] and Grais and Kulathunga.[65] Thus, capital requirements are still as relevant and significant to the safety and soundness of Islamic banks as they are to that of conventional banks. Accordingly, the imposition of capital adequacy on Islamic banks is aimed at maintaining systemic stability by achieving two fundamental objectives. First, the capital regulations should protect risk-averse depositors and PSIA. Hence, this requires a minimum equity capital cushion and an optimal assets–liabilities composition. Second, capital regulations should give the right incentives to shareholders to promote prudent behaviour by the Islamic banks in the form of adjustments to the capital adequacy ratio (CAR) proposed by the conventional regulatory framework.

As mentioned earlier, the capital adequacy standards issued by the IFSB provide detailed guidance on calculating capital adequacy requirements for Islamic

---

[61] D. Muljawan, H.A. Dar and M.J.B. Hall, "A Capital Adequacy Framework for Islamic Banks: The Need to Reconcile Depositors' Risk Aversion with Managers' Risk Taking", *Applied Financial Economics*, Vol. 14, 2004.
[62] A.L. Mejía, S. Aljabrin, R. Awad, M. Norat and I. Song, *Regulation and Supervision of Islamic Banks*, IMF Working Paper No. 14/219 (Washington, DC: International Monetary Fund, 2014).
[63] E. Smolo and M.K. Hassan, *Capital Adequacy Requirements for Islamic Financial Institutions* (London: Bloomsbury Press, 2010).
[64] M.K. Hassan and M.A.M. Chowdhury, "Basel II and Islamic Banking Regulation", *American Journal of Islamic Social Sciences*, Vol. 27, Winter 2010, pp. 74–101.
[65] W. Grais and A. Kulathunga, "Capital Structure and Risk in Islamic Financial Services", in S. Archer and R.A.A. Karim (eds), *Islamic Finance: The Regulatory Challenge* (Singapore: John Wiley & Sons, 2007).

banks and the adjustments required in the CAR formula stipulated in the Basel framework, in consideration of the full or partial risk absorbency characteristics of PSIA. These standards also assist Islamic banks and their RSAs in making the adjustments needed in their credit, operational and market risk calculations to ensure effective coverage of the risk exposures in consideration of products offered by Islamic banks on the assets side of the balance sheet.

The IFSB also issued its supervisory review process standard (IFSB-5), which provides an equivalent of Pillar 2 for Islamic banks. After the introduction of Basel III, the IFSB revised the standard and issued a new one in March 2014, IFSB-16,[66] which provides guidance on various distinct elements of risk management and ICAAP of Islamic banks. The RSAs are expected to satisfy themselves as to the adequacy of various compliance aspects with reference to the IFSB standards, including those on capital requirements. The process of capital determination can involve reasonableness checks against the framework adopted by other countries with best practices. Furthermore, RSAs can consider making good use of economic capital when determining the regulatory capital amount. As economic capital is risk capital that is determined based on economic risk that an entity is running or facing as a going concern, an RSA can consider setting a minimum regulatory capital requirement closer to the economic capital amount identified under ICAAP, if appropriate (e.g. if regulators assessed that the economic capital is not understated and hence provides good protection to the entity).

Furthermore, the effective and meaningful use of stress testing is an important part of ICAAP to identify the risks to which individual institutions might be exposed in the future. In terms of stress tests of operational risk for IIFS, incidents of Sharī'ah non-compliance and their potential impact on the profitability and capital adequacy may have been used to determine the ICAAP and capital requirement. Furthermore, the stress scenarios should have been material enough to inflict any sizeable adverse impact on the IIFS's profitability and capital adequacy, thus justifying its consideration in the operational risk stress tests.

In line with IFSB-2 and IFSB-15, IFSB-16 provides a discretion to RSAs to impose additional capital charges for SNCR when it is needed based on the evaluation of relevant RSAs. It advises that if Sharī'ah non-compliance is considered to constitute a significant portion of operational risk, the RSAs should assess appropriate measures: for example, require additional capital for IIFS. However, the RSAs should specify and provide an explanation of the methodology on the basis for such an additional capital requirement for operational risk. These

[66] IFSB-16: *Revised Guidance on Key Elements in the Supervisory Review Process of IIFS*, March 2014.

factors may include: (a) any precedents of material Sharī‘ah non-compliance; (b) the robustness of an IIFS's existing internal Sharī‘ah governance systems to check (ex-ante) and monitor (ex-post) potential Sharī‘ah non-compliance; (c) the presence of an internal Sharī‘ah audit and the enforcement of relevant Sharī‘ah audit standards; and (d) the availability of a Sharī‘ah review function, including the Sharī‘ah reviewers responsible for assessment of the Sharī‘ah compliance of transaction flows, as determined by the IIFS's Sharī‘ah body or the relevant higher Sharī‘ah body in the jurisdiction in which the IIFS operates. This assessment may be used as the basis for capital add-on estimation by supervisory authorities as part of the ICAAP.

SECTION 3: IDENTIFYING SHARĪ‘AH NON-COMPLIANCE RISK: A CONTRACTUAL PERSPECTIVE

Among the most prominent challenges in the discussion of SNCR is the identification part. Given the nature of Sharī‘ah, which accommodates various opinions and interpretations, an element of subjectivity is unavoidable. Some Sharī‘ah advisers may consider a particular activity as being Sharī‘ah non-compliant, while others might take a different view. Some jurisdictions may see certain contracts as legitimate underlying principles for Sharī‘ah-compliant products, while others may treat them otherwise.

Against this background, the present study focuses on the identification of SCNR resulting from failure to satisfy the essential requirements and conditions of the Sharī‘ah contracts as stipulated in the applicable standards in the relevant jurisdiction by the national Sharī‘ah board (if such a board exists) or the institutional-level Sharī‘ah supervisory board or, alternatively, Sharī‘ah standards such as the widely accepted international standards issued by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

In the above context, a contract assumes an essential role in determining the Sharī‘ah-compliant status of a transaction and activity entered into by Islamic banks, though events that are Sharī‘ah non-compliant may occur on various occasions and in various forms. Rosly concluded that the contract approach is the only method applied by Islamic banks to determine the Sharī‘ah status of products and transactions.[67]

3.1 Concept of Sharī‘ah

The concept of Sharī‘ah is important for understanding the SNCR for Islamic banks. Sharī‘ah is a system of law comprising rules and principles that regulate the life of humans in respect to their relationship with each other and with their creator. Sharī‘ah is sourced from the Qur’ān, Sunnah of the Prophet Muhammad (peace and blessings of Allah be upon him), consensus, analogy, and other acceptable and approved sources derived from these origins. The jurists rely on these sources to arrive at the most likely rules meant by the lawgiver. The outcome of this process is termed a *resolution*.[68]

Sharī‘ah compliance, therefore, refers to complying with the rules derived from

---

[67] S.A. Rosly, “Sharī‘ah Parameters Reconsidered”, *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 3, No. 2, 2010.
[68] Also called a pronouncement or *fatwā* (plural, *fatāwā*).

the said sources. Individuals – or institutions, for that matter – would be deemed compliant with Sharī'ah if they adhere to the rules derived by the jurists from the sources of Sharī'ah. An IIFS in this regard will be considered Sharī'ah-compliant if its operations comply with the Sharī'ah pronouncements/resolutions that are issued by their respective Sharī'ah boards. In jurisdictions where there is a central authority such as the national Sharī'ah board or *fatwā* Council, that central authority commonly has the power to issue such pronouncements/resolutions. In this case, depending on the applicable Sharī'ah governance framework, the Sharī'ah board at the IIFS will usually focus on ensuring that the IIFS is compliant with the pronouncements/resolutions issued by the central authority. The resolutions issued by institutional or central Sharī'ah boards, as the case may be, have binding legal effects on all the IIFS within the concerned jurisdiction. Failure to comply with these pronouncements/resolutions will expose the IIFS to the risk of loss as a result of voiding the underlying contracts.

3.2 Sharī'ah Non-Compliance Risk in Islamic Banks

Sharī'ah is the backbone of Islamic banks: it is instrumental in maintaining the confidence of stakeholders and the public at large. As an institution established within the ambit of Sharī'ah, an Islamic bank is expected to ensure beginning-to-end Sharī'ah compliance in terms of its aims, activities, operations and management. Inadequate attention to the whole process of Sharī'ah compliance will expose an Islamic bank to Sharī'ah non-compliance risk.

The IFSB defines SNCR as "the risk that arises from IIFS' failure to comply with the Sharī'ah rules and principles determined by the Sharī'ah Board of the IIFS or the relevant body in the jurisdiction[69] in which the IIFS operate".[70]

As Islamic banks are operating under various Sharī'ah contracts (*'uqūd*), Sharī'ah non-compliance risks or incidents in Islamic banks that are potentially Sharī'ah non-compliant are identified through the underlying contracts applied. This is despite the fact that Sharī'ah non-compliance events may occur on various occasions and in various forms.[71] The validity of a contract determines the Sharī'ah compliance status of an Islamic bank's products and services. The contract is deemed valid and effective provided that all the essential elements and

---

[69] This definition, however, excludes the risk that the Sharī'ah board of an IIFS is in error and that a higher authority (e.g. a court) ascertains this error (or non-compliance with resolutions of a national Sharī'ah board, if such a board exists, etc.). The excluded type of risk may cause particularly high losses.

[70] IFSB-1: *Guiding Principles of Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005, p. 26.

[71] For example, the Sharī'ah compliance of widely accepted practices is challenged and a consensus emerges that the established practices are non-compliant. Likewise, the deficient legal opinion of the respective Sharī'ah boards (*fatwā* risk) is challenged in the courts.

the necessary requirements of the contract are fully satisfied. Generally, there are four essential elements in the contract – namely, two contracting parties, subject matter (asset and price), and offer and acceptance. Each essential element requires several conditions to be met.

The conditions of each pillar basically vary from one contract to another, because each contract has a specific feature, nature and requirement. Nevertheless, generally, the contracting parties in any contract must possess legal capacity (*ahliyyah*) and legal authority (*wilāyah*) to execute the contract, such as being of sound mind, an adult, rational and able to be held accountable,[72] while the subject matter (*ma'qūd 'alaīhi*) should be in the form of a valuable asset, according to the Sharī'ah, free from uncertainty (*gharar*), known by both parties, recognised by the Sharī'ah, and in existence during the contract's session.[73] Offer and acceptance must be clear and understandable, consistent and continuous.[74] In addition, the contract should be free from prohibitive elements, such as *ribā*, duress (*ikrāh*), mistake (*ghalaṭ*), inequality (*ghubn*), deception (*taghrīr*), and illegal goods or illegal assets. Failure to satisfy the essential elements of a contract and the necessary requirements renders the contract invalid, and hence the risk of Sharī'ah non-compliance will arise. Nonetheless, some of the prohibitive elements in an Islamic contract may not be peculiar to Islamic banks. They are also sources of operational risk in conventional banks, such as fraud, deception and mistake.

Sharī'ah non-compliance risk profiles for certain Sharī'ah contracts are discussed below.

3.2.1 *Murābaḥah* contract

Murābaḥah is one of the most commonly used contracts applied by Islamic banks in various modes of financing, such as home financing, motor vehicle financing, personal financing and trade financing.[75] This is understandable, given the fact that a *murābaḥah* contract can be structured in such a way that it may easily

---

[72] While the classic literature most commonly stipulates these conditions from an individual's perspective, the conditions of legal capacity, legal authority and being held accountable, etc., can be extended to legal persons such as corporations. Hence, these principles apply to Islamic banks and other financial institutions.

[73] Ali Muhyiddin al-Qarah Daghi, *al-Muqaddimah fī al-Māl wa al-Iqtiṣād wa al-Milkiyyah wa al-'Aqd: Dirāsah Fiqhiyyah Qanūniyyah Iqtiṣādiyyah* (Beirut: Dār al-Bashā'ir, 2006), pp. 510–13.

[74] Al-Kāsānī, 'Alā' al-Dīn Abū Bakr, *Badā'i' al-Ṣanā'i' fī Tartīb al-Sharā'i'*, (Beirut: Dār al-Kutub al-'Ilmiyyah, 1986) Vol. 5, p. 136; Ibn 'Ābdīn, Muḥammad Amīn, *Ḥāshiyat Ibn 'Ābidīn*, (Beirut: Dār al-Fikr, 1992) Vol. 4, p. 5; Al-Shawkānī, Muḥammad bin Ali, *Fatḥ al-Qadīr*, (Beirut: Dār Ibn Kathīr, 1414) Vol. 5, p. 80; Al-Shirbīnī, Shams al-Dīn, *Mughnī al-Muḥtāj*, (Beirut: Dār al-Kutub al-'Ilmiyyah, 1994) Vol. 2, p. 5; Al-Dusūqī, Muḥammad bin Aḥmad, *Ḥashiyat al-Dusūqī*, (Beirut: Dār al-Fikr, n.d) Vol. 3, p. 5, Al-Ramlī, Shams al-Dīn, *Nihāyat al-Muḥtāj*, (Beirut: Dār al-Fikr, 1984) Vol. 3, pp. 8-10.

[75] ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), p. 206.

resemble an interest-based loan with almost similar risk characteristics.[76,77] For that reason, a *murābaḥah* contract has a lower operational risk compared to other modes of Islamic financing.[78]

Al-Jazirī defines *murābaḥah* as a form of sale contract that involves disclosing the markup to the buyer. AAOIFI defines *murābaḥah* as a sale of a commodity as per the purchase price with a defined and agreed markup. As a form of sale contract, the essentials and requirements of *murābaḥah* follow the general requirements and conditions of a sale contract, as discussed earlier. Nevertheless, a *murābaḥah* contract has specific conditions to be satisfied: the original price and the markup shall be disclosed to the buyer; the contract should not lead to *ribā*, and the first contract must be valid in case the transaction involves multiple *murābaḥah* contracts.[79]

AAOIFI has specified some conditions for *murābaḥah* contracts, as follows:[80]

1. The asset is in existence at the time of the sale contract.
2. The asset is legally owned by an Islamic bank when it is sold.
3. The asset is intended to be used by the buyer for activities or business permissible by the Sharī‘ah.
4. In the event of late payment, there is no penalty fee or increase in price in exchange for extending or rescheduling the date of payment of accounts receivable, irrespective of whether the debtor is solvent or insolvent.

In view of the above, the *murābaḥah* contract is exposed to SNCR if the contract fails to satisfy the essential requirements of a valid sale contract or it has attached external factors that may hinder its validity. The following are some potential incidents of Sharī‘ah non-compliance in a *murābaḥah*-based transaction:[81]

1. The parties to the contract are ineligible to execute it.
2. The asset is sold to a customer before the bank purchases it from the developer.

---

[76] Tariqullah Khan and Habib Ahmed, Risk Management: An Analysis of Issues in Islamic Financial Industry, Occasional Paper No. 5 (Jeddah: IRTI IDB, 2001), p. 54.
[77] The statement is more true if an individual *murābaḥah* contract is combined with another *murābaḥah* contract or a promise (*wa‘d*), etc.
[78] Tariqullah Khan and Habib Ahmed, *Risk Management: An Analysis of Issues in Islamic Financial Industry*, Occasional Paper No. 5 (Jeddah: IRTI IDB, 2001), p. 64.
[79] ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), pp. 203-204.
[80] AAOIFI, Sharī‘ah *Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), pp. 115-124.
[81] Ibid., pp. 115-124.

3. The original price or markup has not been disclosed to the customer.
4. The disclosed price and/or markup does not reflect the actual cost price and/or markup.
5. The asset transacted, or the collateral used, is Sharīʿah non-compliant.
6. The appointment of an agent is not stated in the legal documentation (no *wakālah* agreement) in the event that the bank appoints the customer as an agent to purchase the asset on behalf of the bank before the bank sells it to the customer.
7. The form setting out the appointment of an agent is not completed and signed.
8. A customer has purchased the asset from the developer and entered into a *murābaḥah* arrangement with the bank to purchase the same asset from the bank without prior termination of the first sale contract.
9. Restructuring takes place without a new contract being executed.
10. There is no possession of the asset purchased.
11. Multiple *murābaḥah* contracts are executed simultaneously based on the same asset.
12. The compensation for breach of promise or for late payment does not reflect the actual cost incurred.

In *murābaḥah* to the purchase orderer (MPO), an additional potentially Sharīʿah non-compliant incident may emerge if the bank only extends cash rather than a commodity, which results in an exchange of money for money with interest.[82] In another scenario, there is also a possibility that the customer has established a contractual relationship with the vendor to acquire a property and, subsequently, approaches a bank for financing without terminating the previously established arrangement. In this case, the bank is actually providing cash with interest, since it does not initially own the property before selling it to the customer. The AAOIFI Sharīʿah standard requires Islamic banks to own a commodity before they can sell it to a customer.[83] This issue is particularly relevant, since Islamic banks, as merely intermediary institutions, neither have real and available commodities for sale, nor are they interested in acquiring the commodities. Their interest lies only in financing the sale or acquisition of commodities by others.

---

[82] H. Izhar, "Identifying Operational Risk Exposures in Islamic Banking", *Kyoto Bulletin of Islamic Area Studies*, Vol. 3, No. 2, 2010, pp. 17–53.
[83] AAOIFI, *Sharīʿah Standards for Islamic Financial Institutions*, Standard No. 30 (Bahrain: AAOIFI, 2010), pp. 521-532.

3.2.2 *Tawarruq* contract

Tawarruq contracts are among the most widely used underlying transactions employed by Islamic banks nowadays for activities ranging from deposit and financing, liquidity management and debt restructuring, and government and debt *ṣukūk* structuring, to risk management and hedging. As for financing activities, *tawarruq* is used to structure various products for different clients, such as personal financing, asset financing, cash line facility, education financing, personal financing, revolving credit facility, working capital financing, home financing and project financing facilities.[84]

Tawarruq is derived from the root word "*wariq*", which means "minted silver". Technically, the International Islamic Fiqh Academy, in its 15th session, in 1998, defined *tawarruq* as a series of sale contracts in succession whereby a person purchases a commodity from a seller on a deferred basis and subsequently sells it to a third party on a cash basis for the purpose of obtaining liquidity.

Classical jurists have different views regarding the Sharī'ah ruling over *tawarruq*, ranging from those who allow it, to those who deem it impermissible. The majority of jurists hold that *tawarruq* in its traditional form is permissible. Nevertheless, two prominent Ḥanbalī jurists, Ibn Taymiyyah and his disciple Ibn Qayyim al-Jawziyyah, departed from the Ḥanbalī school's majority approval of *tawarruq*. They outlawed *tawarruq*, considering it a legal trick (*ḥīlah*) to earn *ribā*, just like *bay' al-'īnah*.85

However, the modern form of *tawarruq* has departed from the definition of *tawarruq* intended and approved by the early jurists. The prevalent practice of *tawarruq* has been structured in such a way that it now differs from the traditional *tawarruq* approved by the overwhelming majority of classical jurists. The traditional *tawarruq* was practised by individuals and was free from any kind of pre-arrangement (*tawāṭu'*). In modern practice, the *tawarruq* concept is applied by institutions and the series of transactions is fully organised.86 For that reason, the current *tawarruq* structure has been a source of much debate among contemporary scholars. The Organization of Islamic Cooperation (OIC) Fiqh Academy, in its 19th session held in Sharjah, the United Arab Emirates, in April 2009, resolved that the modern application of organised *tawarruq*

---

[84] ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), p. 232.
[85] A.W. Dusuki, M.M. Ali and Y.D. Sanrego, *The Application of Commodity Murābaḥah in Burṣa Sūq al-Sīla' Malaysia vis-a-vis Jakarta Future Exchange Sharī'ah Indonesia: A Comparative Analysis*, ISRA Research Paper, No. 49/2013 (Kuala Lumpur: ISRA, 2013), p. 4.
[86] Ibid., p. 8.

is impermissible. On the other hand, AAOIFI, in its Sharīʿah Standard No. 30 (2008),87 and the Sharīʿah Advisory Council (SAC) of Bank Negara Malaysia, in its series of resolutions from 2005 to 2007,88 ruled that organised *tawarruq* is acceptable from a Sharīʿah point of view, subject to strict rules and parameters to ensure that the genuine application of *tawarruq* is observed.

Al-Ghazālī, in view of the above, asserted that the risk of exposure to incidents of Sharīʿah non-compliance in *tawarruq*-based financing is relatively high as compared to other modes of financing, since it involves a series of transactions.89 Therefore, proper review and due diligence is required before the contract is executed. Failure to adhere to the above Sharīʿah parameters will expose Islamic banks to Sharīʿah non-compliance risk. Al-Ghazālī identified potential incidents of Sharīʿah non-compliance in the *tawarruq* transaction as follows:[90]

1. The *tawarruq* arrangement is used to grant financing facilities to individual or non-individual entities whose activities explicitly involve Sharīʿah non-compliant elements, such as *ribā*-based transactions, liquor production, gambling and brothels.
2. While using the bank's name, the bank's staff are engaged in Sharīʿah non-compliant activities with clients.
3. The commodity and/or collateral used for the *tawarruq* arrangement is Sharīʿah non-compliant.
4. The contract is executed before the bank possesses the commodity.
5. The series of sale transactions does not follow the sequential process appropriately.
6. The terms and conditions are not properly and clearly stated, which may lead to misinterpretation during the contract process.
7. The appointment of an agent is arranged prior to the commodity possession, which may lead to fictitious issues.
8. The disbursement of facility is done before the contract is executed.
9. The compensation (*taʿwīḍ*) for late payment does not reflect actual losses.
10. The execution of debt rollover in restructuring and rescheduling.

---

87 AAOIFI, *Sharīʿah Standards for Islamic Financial Institutions*, (Bahrain: AAOIFI, 2010), pp. 521-532.
88 Bank Negara Malaysia, *Sharīʿah Resolutions in Islamic Finance*, (Kuala Lumpur, 2010), pp. 94-100.
89 Nasrun bin Mohamad Ghazali, *Tawarruq In Malaysian Financing System: A Case Study on Commodity Murābaḥah Product at Maybank Islamic Berhad, University of Malaya* (Kuala Lumpur, 2014), p. 34.
90 Ibid., pp. 43-47.

3.2.3 *Istiṣnā‘* contract

Istiṣnā‘ is defined as “a contractual agreement with a manufacturer to produce items with specified descriptions at a determined price, and manufactured from his own materials with his own effort.”[91] *Istiṣnā‘* is a form of sale contract that involves manufacturing and construction activities. In the current practice, *istiṣnā‘* is commonly applied using parallel *istiṣnā‘* for financing construction and manufacturing activities. In the current Islamic banking operation, *istiṣnā‘* is applicable in providing a facility that requires manufacturing or construction, such as a financing facility for construction of a house, aircraft or ship, or for manufacture of factory equipment.

As a form of sale contract, there are some basic conditions to be fulfilled in an *istiṣnā‘* contract, including: (a) the object to be manufactured should be specifically determined so as to avoid any dispute in the future; (b) the object of *istiṣnā‘* should be in the form of something to be manufactured; and (c) the time of delivery should be clearly specified and agreed at the time of execution of the contract so as to avoid uncertainty.[92] As for parallel *istiṣnā‘*, AAOIFI requires that a sale and purchase contract should be executed independently and separately.[93]

The above conditions need to be properly adhered to so as to ensure Sharī‘ah compliance. Some incidents that potentially may be Sharī‘ah non-compliant that may arise in the *istiṣnā‘* contract due to non-fulfilment of its conditions are as follows:[94]

1. The parties entered are ineligible to execute the contract.
2. The asset is not properly specified in the agreement.
3. The *istiṣnā‘* asset to be constructed and/or its purpose is not Sharī‘ah-compliant.
4. The *istiṣnā‘* asset is already available or completed at the time of execution of the *istiṣnā‘* contract.
5. The parties have failed to determine or agree on the price at the time of execution of the *istiṣnā‘* contract.
6. The manufacturer unilaterally increases the price of the *istiṣnā‘* asset as a result of a request for extension of the payment period.
7. The manufacturer fails to adhere to the conditions stipulated by the buyer.

---

91 ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), p. 207.
92 Ibid., p. 208.
93 AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), pp. 181-188.
94 Bank Negara Malaysia, *Istiṣnā‘* Concept Paper (Kuala Lumpur: BNM, 2014), pp. 7-16.

8. The time of delivery is not specified and agreed at the time of execution of the *istiṣnā'* contract.
9. The punitive condition imposed by the buyer on the manufacturer due to late delivery is not based on the estimated loss incurred.
10. The manufacturer stipulates a condition to waive his liability for an incomplete *istiṣnā'* asset or a defective asset.
11. The buyer sells to another party the *istiṣnā'* asset before he takes possession of the asset to another party.
12. The seller (bank) grants a financing facility under an *istiṣnā'* contract for the completed asset.

In the case of parallel *istiṣnā'* as practised by Islamic banks, there is an additional degree of potential Sharī'ah non-compliance if the two *istiṣnā'* contracts are interrelated and one is made conditional upon the other. AAOIFI's Sharī'ah standard clearly stipulates that "it is not permitted to make any contractual link between the obligations under two contracts (the contract of *istiṣnā'* and the contract of parallel *istiṣnā'*) when they are concluded".[95] While most Islamic banks arrange for *istiṣnā'* and parallel *istiṣnā'* contracts to be independent of each other, in the absence of a proper Sharī'ah governance framework, the risk of making them contractually linked is heightened.

3.2.4 *Ijārah* contract

Ijārah is defined as "a contract for a transfer of ownership of usufruct for compensation".[96] In the current practice, an *ijārah* contract is commonly structured for financing that ends with transfer of ownership under AITAB (*ijārah thumma al-bay'*) and for home financing under construction using *ijārah mawṣūfah fī al-dhimmah*.[97]

Jurists regarded *ijārah* as a form of sale contract that is sale of usufruct. Therefore, some requirements in a sale contract also apply to an *ijārah* contract. Generally, the essential requirements of *ijārah* contracts are as follows: (a) consent of the parties involved; (b) the usufruct is known and specified; (c) the usufruct is deliverable; and (d) the contract is Sharī'ah-compliant.[98] Failure to meet the requirements of an *ijārah* contract will potentially lead to a Sharī'ah non-compliant

---

[95] AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), p. 189.
[96] ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), p. 233.
[97] *Ijārah mawṣūfah fī al-dhimmah* is defined as a lease contract in which the ownership of usufruct is transferred at a future agreed date, as the asset is not yet available or owned by the lessor at the time of execution of the contract. In this contract, the lessor undertakes to deliver the usufruct of the asset based on the agreed specifications.
[98] S. Sābiq, *Fiqh al-Sunnah* (Beirut: Dār al-Kitāb al-'Arabī, 1997), Vol. 3, p. 183.

transaction. In view of this, the potentially Sharīʻah non-compliant transactions in an *ijārah* contract (i.e. *AITAB* and *ijārah mawṣūfah fī al-dhimmah*) are as follows:

1. The parties to the *ijārah* contract are ineligible to enter into the contract.
2. The *ijārah* asset and/or its purpose is not Sharīʻah-compliant.
3. One asset is used for multiple lease contracts simultaneously.
4. The lessor stipulates the conditions for waiving his liability for any defect in the *ijārah* asset.
5. The lessee breaches the conditions agreed by both parties for utilisation of the *ijārah* asset.
6. The lessor imposes a condition on the lessee to be held liable for any loss or defects in the *ijārah* asset.
7. The lease period is not specified and agreed by the contracting parties at the time of execution of the *ijārah* contract.
8. The rental is not determined and agreed at the time of execution of the contract.
9. The lessor increases the rental unilaterally
10. The collateral for the *ijārah* contract is not Sharīʻah-compliant.
11. The compensation (*taʻwīḍ*) imposed by the lessor on the lessee due to late rental payment does not reflect the actual cost incurred.

In current Islamic banking practice, the bank and the customer will also enter into a forward lease under an *al-ijārah al-mawṣūfah fī al-dhimmah* or *al-ijārah al-muḍāfah ilā al-mustaqbal* arrangement. In this arrangement, the customer will normally pay advance rental regularly in exchange for future service (*khidmah*) or for a leased asset to be delivered in the future. The SNCR issue may arise if the bank does not recognise advance rental paid by the customer as a compensation for the future usufruct/service. This is particularly relevant if the bank refunds the advance rental in the case of early termination of a contract before delivery of the leased asset or service.

3.2.5 *Muḍārabah* contract

Muḍārabah is a form of partnership contract where one party provides capital and the other party provides skill and managerial expertise. Any profit will be shared according to a predetermined profit-sharing ratio. Any financial loss will be borne by the capital provider (*rabb al-māl*), except if the loss is due to the *muḍārib*'s negligence, misconduct or breach of terms.[99] Sharīʻah scholars have laid down

[99] ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011), p. 249.

some conditions for the *muḍārabah* contract, including that the *muḍārabah* capital is known by both parties and that the profit-sharing ratio is determined and agreed at the time of execution of the contract.[100] According to AAOIFI, the *muḍārabah* capital should be invested in Sharī'ah-compliant business activities and the *muḍārib* cannot guarantee the capital.[101] Failure to satisfy the Sharī'ah requirements in a *muḍārabah* contract will expose Islamic banks to a Sharī'ah non-compliant transaction.

Khan and Ahmed found that the operational (Sharī'ah) risk in a *muḍārabah* and *mushārakah* contract is relatively high compared to other modes of financing. This signifies that Islamic banks regard the contracts as being complex and difficult to implement. Some possible operational (Sharī'ah) risks that might occur in a *muḍārabah* contract are as follows:[102]

1. The *muḍārib* does not adhere to the terms and conditions stipulated by the capital provider (*rabb al-māl*).
2. The *muḍārib* does not act in the interest of the capital provider.
3. The capital provider stipulates a condition to guarantee the capital and/or profit.
4. The capital value is not determined and agreed at the time of execution of the contract.
5. The profit-sharing ratio is not agreed and determined at the time of execution of the contract.
6. The profit is linked to the amount of *muḍārabah* capital.
7. The *muḍārabah* contract stipulates that any loss in the project will be borne by the capital provider, or by some capital providers in the case of multiple capital providers.

3.2.6 *Mushārakah* contract

AAOIFI defines *mushārakah* as "an agreement between two or more parties to combine their assets, labour or liabilities for the purpose of making a profit".[103]

---

[100] Al-Jazrī, Abdul Raḥmān, *al-Fiqh 'Alā al-Madhahib al-Arba'ah* (Beirut: Dār al-Kutub al-'Ilmiyyah, 2003), pp. 36-43.
[101] AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), p. 236.
[102] Ibid., pp. 235-240.
[103] Ibid., p. 203.

Some potential Sharī'ah non-compliance risks in a *mushārakah* contract based on the AAOIFI Sharī'ah standards are as follows:[104]

1. The contract clause stipulates that the managing partner or certain partners are required to guarantee the capital against any financial loss.
2. The amount of capital to be contributed by each partner is not specified and determined at the time of execution of the contract.
3. The contract clause stipulates a predetermined fixed amount of profit to the partners.
4. Certain partners are required to undertake the purchase of other partners' shares at par/nominal value.

3.3 Methodology for Dealing with Sharī'ah Non-Compliance Risk

Sharī'ah compliance covers a wide spectrum and operational angles of an IFI's activities. However, Sharī'ah non-compliance risk is commonly associated with the failure of an Islamic bank's products and their underlying procedures (information system, accounting, etc.) to comply with Sharī'ah requirements in the contract. The present section presents the methodology for dealing with Sharī'ah non-compliance risk from the perspective of an invalid contract.

The majority of jurists use the term *bāṭil* or *fāsid* to indicate an invalid contract. They do not differentiate between them.[105] Both terms are the opposite of *ṣaḥīh*, which means having a single legal substance,[106] and are often used interchangeably. Literally, *bāṭil* means null and void. Technically, *bāṭil* or *fāsid* is a contract that fails to satisfy the essential requirements and conditions of the contract.[107] For example, the asset is not in existence at the time of execution of the contract or is not recognised by the Sharī'ah; the seller does not own the asset; the price is not clearly specified and agreed; the contracting parties do not have legal capacity to enter into a contract, etc. From a Sharī'ah point of view, an invalid contract does not produce any legal effect.[108] If the parties want to proceed with the contract, it should be re-executed from the beginning.

---

[104] AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), pp. 204-216; Bank Negara Malaysia, *Mushārakah* Concept Paper (Kuala Lumpur: BNM, 2013), pp. 7-14.
[105] Ibrahim al-Maḥallī, *Sharḥ al-Waraqāt fī Uṣūl al-Fiqh* (Riyadh: Maktabat al-'Abikān, 2001), p. 94.
[106] Al-Ramlī, Muḥammad ibn Aḥmad, *Ghāyat al-Bayān* (Beirut: Dār al-Ma'rifah, n.d), p. 25.
[107] Al-Shawkānī, *al-Sayl al-Jarrār al-Mutadaffiq 'Alā Ḥadā'iq al-Azhār* (Beirut: Dār Ibn Ḥazm, n.d.), p. 539.
[108] Wizārat al-Awqāf wa al-Shu'ūn al-Islāmiyyah, *al-Mawsū'ah al-Fiqhiyyah al-Kuwaitiyyah* (Kuwait: Dār al-Salāsil, 1404-1427), Vol. 9, p. 54.

On the other hand, the Ḥanafī school distinguishes between the ruling and legal implications of *bāṭil* and *fāsid*. Their position is premised upon the ground that the irregularity in a contract is due to either a fundamental element (*aṣl*) or an accessory attribute (*waṣf*). The Ḥanafī school agreed with the majority that an irregularity in a fundamental element (*aṣl*) makes the contract void (*bāṭil)*, which cannot be rectified. However, a defect in an external factor (*waṣf*) will only make the contract voidable (*fāsid*)109 but rectifiable. The next section deliberates on the concept of *bāṭil* and *fasid* based on the Hanafi school.

3.3.1 *Bāṭil* contract

As indicated earlier, *bāṭil* is an invalid contract due to the existence of defects in any of its essential elements. A *bāṭil* contract does not have any legal implications. No transfer of ownership takes place. The purchaser does not legally own the asset, while the seller cannot recognise any profit. Any income derived from the contract is illegitimate and, hence, should be returned to the original owner. If the buyer has disposed of the asset to another party after taking delivery, the initial seller still has the right to reclaim the asset.[110] A new contract relationship should be established from the beginning if the parties want to proceed with the contract. However, in the event that the contract involves an asset that is clearly outlawed by the Sharī'ah, such as wine, the counter-value of such an asset should be channelled for charitable purposes[111] and not to be returned to the original owner. This is based on the Sharī'ah principle that prohibits assisting others to commit a sin (*i'ānah 'alā al-ma'ṣiyah*).

3.3.2 *Fāsid* contract

A *fāsid* contract is an intermediary class of contract between *ṣaḥīḥ* and *bāṭil* which is recognised in the Hanafi school. The Ḥanafī school defines a *fāsid* contract as one that is valid in its essential element (*aṣl*) but defective in terms of an external attribute (*waṣf*).[112] Unlike a *bāṭil* contract, a *fāsid* contract is not necessarily void; it is voidable, but rectifiable. Once the intolerable elements are rectified, the contract becomes valid and effective. Ḥanafī jurists have identified some factors leading to a *fāsid* contract. They include:

---

[109] Ibid., Vol. 9, p. 55.
[110] Ibid., Vol. 3, p. 285.
[111] Ibn Taymiyyah, Taqi al-Dīn, *al-Fatāwā al-Kubrā* (Beirut: Dār al-Kutub al-'Ilmiyyah, 1st edition, 1987), Vol. 29, p. 291.
[112] Al-Bukhārī, Abdul Azīz, *Kashf al-Asrār* (Beirut: Dār al-Kutub al-Islāmiyyah, n.d), Vol. 1, p. 38.

1. Insufficient information is provided in regard to the asset, price, time of delivery and surety/guarantee/pledge.[113]
2. An invalid condition exists, such as a condition that restricts the buyer from taking delivery of the asset purchased.[114]
3. Coercion (*ikrāh*) exists. According to Ḥanafī jurists, the absence of consent, such as when an element of *ikrāh* exists, makes the contract voidable (*fāsid*)[115] but rectifiable. This is because consent is not an essential element of a contract; rather, it is a condition determining its validity.
4. An element of *ribā* exists.

Since *fāsid* does not necessarily require a contract's re-execution, the contract can be rectified to make it valid and effective. The rectification process (*taṣḥīḥ*) in most cases may be done in two ways. One way is to remove the objectionable elements that render the contract *fāsid*. If such elements are removed, the contract becomes valid and effective. This corresponds with the Ḥanafī legal maxim which reads: "When the impediment disappears while the reason for the ruling is present, the [original] ruling returns."[116] For example, the contract that contains an invalid condition may be rectified by eliminating the defective condition which causes the contract to be voidable. Another example is the inclusion of a *rib*ā element that may invalidate the contract. In this case, according to the Ḥanafī school, the contract may be rectified by removing the clause on *ribā* or by returning the *ribā* element to the original owner.

The second method of rectification is to change the *fāsid* contract into another suitable contract that makes the contract valid, by looking into its substance. This method is substantiated by the legal maxim which reads: "In a contract the consideration is given to substance and meaning, not to the forms and structures." An example is a *kafālah* (guarantee) contract with the condition that the debtor shall be free from any obligation. The contract is deemed *fāsid* because this condition contravenes the nature of *kafālah*. However, the rectification may be made by changing the contract into a *ḥawālah* contract with all its rulings and legal effects. Another example is that a custodian in a *wadīʿah* contract is not allowed to use the deposit and is not held liable to indemnify any loss or damage except in the case of negligence or misconduct. However, in the event that the custodian stipulates the right to utilise the deposit, the *wadīʿah* contract becomes *fāsid*. Yet,

---

[113] Al-Zuḥaylī, Wahbah, *al-Fiqh al-Islāmī wa Adilatuhū* (Damscus: Dār al-Fikr, 2004), Vol. 5, pp. 3441-3446.
[114] Ibid., Vol. 5, p. 3471.
[115] Wizārat al-Awqāf wa al-Shu'ūn al-Islāmiyyah, *al-Mawsūʿah al-Fiqhiyyah al-Kuwaitiyyah* (Kuwait: Dār al-Salāsil, 1404-1427), Vol. 9, p. 101.
[116] Ibid., Vol. 12, p. 60.

it can be rectified by shifting the contract into a *qarḍ* (loan). As a consequence, the custodian is liable to guarantee the principal of deposit.

Based on the explanation above, it can be concluded that, according to the Ḥanafī school, not all Sharī'ah non-compliant events in Islamic banks render a transaction null and void, making the income eventually illegitimate. In most cases, Sharī'ah non-compliant events may be rectified and amended. Once the event is rectified the contract is deemed valid and effective and any income derived therefrom is therefore legitimate.

The Ḥanafī school's approach to an invalid contract in a financial transaction is also supported by some Mālikī and Shāfi'ī jurists. Al-Qarāfī of the Mālikī school has described the the Ḥanafī school›s approach as a sound juristic exercise.[117] Some Shāfi'ī school's also differentiate between *fāsid* and *bāṭil* in some contracts, such is *wakālah*, *i'ārah* and *ijārah* contracts. Some even follow the Ḥanafī school's view in all types of contracts.[118] The approach used by contemporary *fiqh* scholars also supports the Ḥanafī school's stand. Therefore, the Ḥanafī school's categorisation of invalid contracts can be considered preferable for a number of reasons.

1. Not every defect in a contract is so serious as to require re-execution of the contract. Some defects are minor and can be easily rectified by removing the objectionable elements.
2. Re-execution of a contract can be a complex matter, as many contracts today are cross-border and involve thousands of clients.
3. The Ḥanafī school's categorisation provides more options to the market players to apply the Islamic law of contract in modern-day financial operations.

3.4 Examples of Sharī'ah Non-Compliance Events in Islamic Banks

Islamic banks are institutions that are expected to comply with Sharī'ah principles in all their operational and business activities. However, Sharī'ah non-compliance incidents are sometimes unavoidable. Poor governance, a lack of Sharī'ah-qualified officers and inadequate control mechanisms are the main factors that trigger Sharī'ah non-compliance events in Islamic banks. A potentially non-compliant incident is identified by Sharī'ah review or Sharī'ah audit functions. Any identified incident is classified as a potential Sharī'ah non-compliance event

[117] Al-Qarāfī, Shihāb al-Dīn, *al-Furūq* (Beirut: 'Alam al-Kitāb, n.d), Vol. 2, p. 83.
[118] Al-Ramlī, Muḥammad ibn Aḥmad, *Ghāyat al-Bayān* (Beirut: Dār al-Ma'rifah, n.d), p. 25.

before it is tabled and presented to a Sharī'ah committee for its deliberation. The Sharī'ah committee will then confirm whether the incident is an actual non-compliance event or not. If the event is deemed to be non-compliant, the committee will provide a rectification plan determining whether the contract requires re-execution or correction, or whether purification is needed. In all cases, in the context of Malaysia, any potential and actual Sharī'ah non-compliance event has to be reported to the Central Bank of Malaysia (Bank Negara Malaysia). Table 2 lists some examples of Sharī'ah non-compliance incidents in Islamic banks in the case of Malaysia.

Table 2: Examples of Sharī'ah Non-Compliance Incidents in Islamic Banks in Malaysia

Sharī'ah Contract Involved	Description of Event
BBA	▪ Commitment fees have been charged to customers for the unutilised cash line-i facility. ▪ The contract does not observe the correct sequence – i.e. the time for sale *aqad* is prior to *purchase aqad*. ▪ The imposition of *ta'wīḍ* does not reflect actual cost.
Tawarruq	▪ The asset is sold to the customer before the bank purchases the asset from the broker/platform. ▪ The facility is disbursed before the contract is executed. ▪ There is no *wakālah* arrangement involved in the commodity *murābaḥah* transaction. ▪ The price is mistakenly disclosed to the customer. ▪ The legal document involves a provision that restricts the customer, as the purchaser, from taking delivery of the commodity. ▪ The financing facility is used for Sharī'ah non-compliant purposes. ▪ There is no evidence of commodity trading.

Sharī'ah Contract Involved	Description of Event
Bay' al-'Īnah	▪ The two contracts involve an inter-conditionality element to repurchase the asset. ▪ The underlying sale contract has not been executed. (The facility has been disbursed without any sale contract being executed). ▪ The sequence of contracts for a cashline facility were not properly observed. ▪ Financing is used for Sharī'ah non-compliant purposes. ▪ Both the APA (Asset Purchase Agreement) and the ASA (Asset Sale Agreement) were executed without subject matter.
Istiṣnā'	▪ In some legal documentation, it is found that the bank as the seller has required the customer to accept the constructed project/property under an *istiṣnā'* contract on an "as is, where is" basis.
AITAB (*Al-Ijārah Thumma al-Bay'*)	▪ There is an error in the imposition of compensation (*ta'widh*) due to late payment which does not reflect the actual cost. ▪ Some Islamic banks still use conventional insurance as their panel for a car financing facility under Hire Purchase-i (HP-i).
Muḍārabah	▪ The documents contain a clause indicating the capital guarantee to the capital provider. ▪ The profit is distributed based on an indicative rate, not on the actual performance of the venture or the actual profit realised. ▪ Client activities are proven to be Sharī'ah non-compliant.

In terms of Sharī'ah non-compliance incidents in Islamic finance, the case of The Investment Dar Company (TID), a Sharī'ah-compliant finance house based in

Kuwait, versus Blom Development Bank (Blom), a Lebanese bank, which was litigated in England in late 2009, is cited. Blom entered into a *wakālah* agreement in 2007 that was governed by English law. Under the *wakālah* agreement, Blom appointed TID as its agent to invest its funds in a Sharī'ah-compliant portfolio worth US$11.5 million. TID was also obliged to provide Blom with a certain rate of return, irrespective of the actual performance of the underlying investment. The issue emerged when the investment failed and TID could neither repay the principal, nor pay the return specified in the agreement. Subsequently, Blom brought the case to the English High Court, claiming that TID should repay the total amount it had invested, along with the specified profit rate. The court provided Blom with a summary judgment ordering TID to pay Blom the original principal but not the agreed profit rate. TID argued that the contract was actually non-compliant with the Sharī'ah, since TID had received the deposit from Blom based on its providing a certain fixed interest, making the whole transaction null and void. On the other hand, Blom counterclaimed that the contract was approved by its Sharī'ah committee, proving the transaction was indeed Sharī'ah- compliant. The appellate court held that TID had raised an arguable case which required consideration at a full trial.[119] The decision does not conclude, however, that the agreement was non-compliant with the Sharī'ah; rather, the case could be theoretically argued and challenged on the basis that a *wakālah* contract is a trust-based contract that does not guarantee a certain rate of return irrespective of the actual performance of the underlying investment.[120] AAOIFI, in its Sharī'ah Standard No. 36, states that an investment agent in *wakālah bil istithmār* is a trustee; thus, he is not held liable for any financial loss unless such such loss results from his negligence, misconduct or breach of terms.[121]

The Sharī'ah non-compliance issue in a *wakālah* agreement is also found in the case of National Sukuk Company vs Al-Madina for Finance and Investment Company, based in Kuwait. In this case, National Sukuk Company provided Al-Madina for Finance and Investment Company with a financing facility amounting to AED120 million based on the *wakālah* concept. The contracting parties agreed that at the maturity date the investment agent (Al-Madina for Finance and Investment Company) would pay back the total facility amount as well as a prescribed fixed profit amount to the principal (National Sukuk Company). At the given maturity date, the investment agent failed to provide the principal with the principal amount as well as its pre-agreed profit rate. Subsequently, the parties

---

[119] [2009] EWHC 3545 (Ch).
[120] Allen & Overy, *wakālah* contracts: what are the implications of the judgment in TID v Blom? (5 March 2010) retrieved from http://www.allenovery.com/publications/en-gb/Pages/Wakala-contracts--what-are-the-implications-of-the-judgment-in-TID-v-Blom-.aspx (22 March 2016).
[121] AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010), p. 53.

entered into a new settlement agreement and the investment agent agreed to pay a lesser amount to the principal upon the subsequent maturity date. However, the investment agent again failed to settle the payment. The principal then brought the case to the Kuwait Court. The court initially approved the claim by the principal, ordering the investment agent to pay the settlement amount as per the agreement. However, the investment agent appealed the decision, arguing that the contract was indeed in violation of the nature of a *wakālah* contract in which the profit rate should be indicative and expected, not fixed and guaranteed. The investment agent further argued that the agent in a *wakālah* contract is actually a trustee who is not held liable to guarantee the facility amount except in the case of negligence and misconduct by the investment agent. Furthermore, the investment agent contended that the judgment failed to apply those Sharī'ah principles that were applicable to the *wakālah* agreement. The appellate court agreed with the investment agent that if these defences were substantiated,[122] and if the principal did not provide an acceptable counterargument, the lower court's decision could be overruled.[123]

In January 2000, Islamic Investment Company of the Gulf (IICG) Ltd and Symphony Gems NV entered into a *murābaḥah* agreement. Under the agreement, Symphony requested IICG to purchase a quantity of gems (diamonds). Based on this request from Symphony, IICG purchased from Gems Precious HK Ltd in Hong Kong (supplier) a quantity of gems for USD15 million. However, the supplier failed to deliver the product; hence, no delivery ever took place. IICG then sold the gems to Symphony with a markup, bringing the total selling price to USD15,834,900. A dispute arose when the supplier failed to deliver the product and Symphony did not pay the price. The case was brought to the court based on English law, where the judge decided that, based on the agreement, the contract was valid and enforceable, from an English law perspective, even if the delivery did not take place.[124] Nevertheless, from a Sharī'ah perspective, the agreement between IICG and Symphony did not satisfy the requirements of a *murābaḥah* contract and, hence, the whole arrangement was actually null and void. Two reasons account for this judgment. First, a clause in the agreement stated that the delivery of goods was not a requirement for payment of the price. In fact, the case indicated that possession and delivery – a fundamental requirement for a

---

[122] One of the questions before the three-member panel of experts from the Ministry of Justice, Kuwait, to whom the case has been referred by the court, is to determine whether the facts of the case merit an interpretation that the agreement is indeed a *Sharī'ah*-compliant *wakālah* arrangement. Also see the next footnote.

[123] P. Saba and F. Fathnezhad, "Implication of the Kuwait TID v. Blom Judgment on *Wakālah* Contract", Al-Tamimi & Co., www.tamimi.com, December–January 2013.

[124] Murabaha Agreement between Islamic Investment Company of the Gulf (Bahamas) Ltd v Symphony Gems NV & Ors [2008] EWCA Civ 389 (11 March 2008), ([2008] EWCA Civ 389, From England and Wales Court of Appeal (Civil Division) Decisions; 31 KB).

valid *murābaḥah* contact – never took place. Second, according to Sharī'ah, the liability for delivering the goods was supposed to be borne by the seller – that is, IICG. In this case, the risk and liability was borne solely by the purchaser, Symphony.[125]

[125] H. Yaacob and E. Smolo, "It is not a *Murabāḥah* Contract: It is Just an English Law of Contracts", *Opalesque Islamic Finance Intelligence*, 31 May 2010.

SECTION 4: THE IMPACT OF SHARĪ‘AH NON-COMPLIANCE RISK ON CAPITAL ADEQUACY REQUIREMENTS

4.1 Methodology for Measuring the Significance of SNCR in the Capital Adequacy Framework

The previous sections of this paper outlined the nature of operational risk, as a “residual risk” that is difficult to quantify or to predict. In applying a capital adequacy framework, the international standards have used “proxies”, such as gross income or a “business indicator”, to calculate the operational risk capital charge on the banking industry. For this reason, while the major operational risk losses faced by the conventional banking sector have been due to “people risk” in the form of rogue traders (as in the case of Barings Bank, UBS, Société Générale, etc.) or to legal settlements for their role in the Global Financial Crisis or for dealing with countries on the sanctions list (e.g. Credit Suisse, JP Morgan Chase, BNP Paribas, etc.), the penalties and fines have been handled under the Basel Pillar 2 regime, instead of applying a capital charge on all the banking institutions in a jurisdiction.

Against this background, as outlined in Section 3, the present study focuses on the identification of SCNR resulting from failure to satisfy the essential requirements and conditions of the Sharī‘ah contracts as stipulated in the applicable standards in the relevant jurisdiction by the national or institutional Sharī‘ah board or in widely accepted international Sharī‘ah standards.[126] The implications of these instances are reflected in the Sharī‘ah non-compliant income (SNCI) of Islamic banks, which serves as a “proxy” for the SNCR.

Accordingly, the data on SNCI was collected from the annual reports or financial statements of the Islamic banks. Since the financial statements obtained from BankScope did not disclose the amount of SNCI, the study analyses the individual annual reports of each of the Islamic banks in the sample. The reports comprised: (1) the Sharī‘ah board report; (2) notes in the financial statements on other liabilities, including charity funds; and (3) Sharī‘ah governance or Sharī‘ah risk management reports, if available.

Overall, information was searched from Islamic banks from 23 jurisdictions; however, relevant information was available from only 51 Islamic banks in 11

[126] Thus, the irregular, unpredictable and potentially very large implications of SNCR in particular cases (such as legal or documentation risk) will be dealt by the RSAs using other instruments in their tool kit under supervisory review process. A similar approach is taken in the case of reputational risk that are outside Basel capital adequacy calculations.

jurisdictions, which provides a fairly large and diversified sample.[127] Details of data collection for the study can be found in Appendix 1. The limitations of this approach are as follows:

- The disclosures on SNCI in the financial statements do not include any details on the SNCR for the different types of contracts discussed in Section 3.[128]
- Not all SNCR events result in financial loss, because most can be rectified or their income purified, as discussed in Section 3.
- The regulatory response to many dimensions of operational risk is managed more adequately by the supervisory actions applicable to individual financial institutions in the form of Pillar 2, instead of imposing capital requirements on the group of institutions in a jurisdiction.

In consideration of the above limitations, this study undertakes a series of analyses as follows:

1. Descriptive, ratio and correlation analysis are conducted for the data of 51 Islamic banks, as listed in Appendix 2.
2. Regression analysis was performed to examine the significance of SNCI vis-à-vis bank-specific variables, such as the bank's size, profitability and capitalisation. Moreover, country-specific variables, such as GDP per capita, were collected from the BankScope database, along with annual reports of the individual banks from their websites and World Bank data. Based on the availability of the data for the five-year period (i.e. 2010–14), 28 Islamic banks were selected as the sample for this analysis. The data are set out in Appendix 3.
3. Assuming the limitations of SNCI as an indicator of SNCR, two stress testing scenarios have been established to analyse SNCR as a tail risk event under extreme but plausible stress scenarios.

The purpose of the first analysis is to calculate the ratios of SNCI over total assets, total equity and net income, which helps to ascertain whether the amount of SNCI is significant or not as compared to these common, bank-specific variables. The second analysis examines the correlation between SNCI and total assets, total equity and net income. This will explain whether or not there is any relationship

[127] These 11 countries mainly represent jurisdictions where local regulations stipulate the Sharī'ah governance framework applicable to Islamic banks.
[128] As mentioned in the next section, future studies on this subject could endeavour to collect data on individual contracts in the form of a detailed survey or quantitative impact study of Islamic banks.

between the two variables for: (1) SNCI and total assets; (2) SNCI and total equity: and (3) SNCI and net income. The third analysis examines any significant impacts of SNCI on bank size, profitability and capitalisation by conducting panel regression modelling. In the stress analysis part, Islamic banks' variables have been stressed based on two scenarios to analyse the impact on CAR.

4.2 Analysis of SNCI for Islamic Banks

4.2.1 Descriptive and ratio analysis

Descriptive and ratio analysis were conducted to understand the significance of SNCI as compared to the Islamic bank's total assets, total equity and total net income. This analysis explains the ratios between SNCI and other bank-specific variables (namely, total assets, total equity, and total net income of Islamic banks) for Islamic banks. The data for SNCI were collected from the individual Islamic banks' annual reports.[129] These figures were converted from their original currency to USD for comparison purposes. World Bank data[130] was used for the exchange rates for the years 2010–14. The amounts for total assets, total equity and total net income were extracted from the BankScope database. No conversion rate is required for these figures, as they are already in USD. The ratio analysis can be found in Appendix 4.

The descriptive statistics analysis was performed to determine the statistical measurements of mean, standard deviation, and minimum and maximum of the main variables, which are: (1) SNCI; (2) total assets; (3) total equity; and (4) total net income. The results are shown in Table 3. The analysis indicated that the amount of SNCI is significantly smaller than the total assets and total equity of Islamic banks. The mean of SNCI is only USD435,409.12, compared to the means of total assets and total equity, which were USD5,710,632,492.28 and USD599,646,758.62, respectively. This showed, on average, that the ratio of SNCI to total assets and total equity was only 0.008% and 0.073%, respectively, which is insignificant compared to the total assets and total equity. However, the variation is quite high – that is, USD1,184,017.49 where the minimum reported SNCI was no amount (i.e. zero), while the maximum was USD12,100,000.00. (It is important to mention that, when compared to the amount of total assets, the SNCI of this particular bank is negligible at a mere 0.06%.) Overall, the analysis demonstrated that, although SNCI is insignificant, the variation in absolute size of

[129] The figures for SNCI were not available from the financial statements in the BankScope database.
[130] http://data.worldbank.org/indicator/PA.NUS.FCRF.

SNCI in different banks for various periods might be quite high, which is plausible given the different sizes of the Islamic banks.

Table 3: Descriptive Statistics on SNCI, TA, TE and NI (USD)

	# of Obs.	Mean	Std Deviation	Minimum	Maximum
SNCI	202	435,409.12	1,184,017.49	0	12,100,000.00
TA	202	5,710,632,492.28	8,059,441,868.11	36,961,947.89	41,886,810,377.31
TE	202	599,646,758.62	913,398,545.73	8,170,130.57	4,821,266,108.91
NI	202	56,678,365.93	120,793,135.83	(229,500,000.00)	763,430,896.11

Notes:
SNCI = Sharī'ah non-compliant income
TA = Total assets
TE = Total equity
NI = Total net income

The next descriptive analysis explains the ratio analysis of SNCI to the three main bank-specific variables (i.e. total assets, total equity and total net income), as shown in Table 4. The details of the data on ratio are provided in Appendix 4. Similarly, the analysis showed that the mean ratios of SNCI over TA, and SNCI over TE, were insignificant. However, the mean ratio of SNCI over NI can be considered high (i.e. 2.14%), compared to the other ratios. This might be due to the maximum ratio of 118.46%.[131]

Table 4: Descriptive Statistics on the Ratio of SNCI over Bank-specific Variables

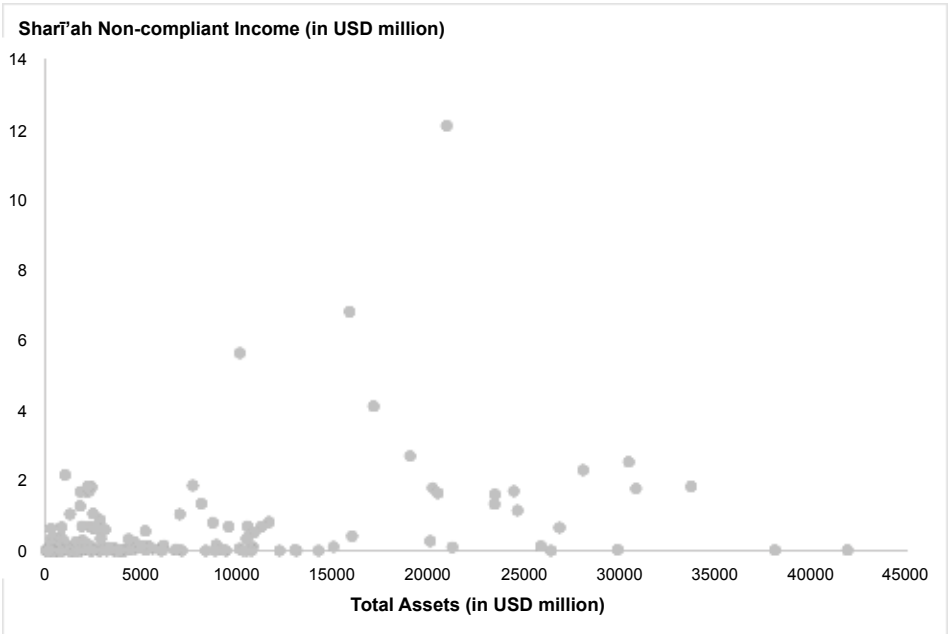
	Sample	Mean	Std Deviation	Minimum	Maximum
SNCI/TA	202	0.01%	0.03%	0%	0.21%
SNCI/TE	202	0.12%	0.25%	0%	1.56%
SNCI/NI	202	2.14%	11.68%	(65.36%)	118.46%

[131] This maximum ratio is due to the fact that this particular Islamic bank has a low net income for year 2010 due to a high level of "other expense" recorded in its income statement. For the following years, this bank's net income has increased multiple times, whereas its SNCR has reduced.

4.2.2 Correlation analysis

Chart 1 illustrates the scatter plot of SNCI versus total assets, which explains the trend between these two variables. As can be seen from the chart, no linearity exists between the two variables. Hence, the increase in Sharī'ah non-compliant income has no impact on changes in total assets. The correlation coefficient is 0.36%.

Chart 1: Scatter Plot of SNCI versus Total Assets



Similarly, by examining Charts 2 and 3, one can see that there is no evidence for a linear relationship between the examined variables, and that the correlation coefficients are 0.35% and 0.32%, respectively. The correlation table can befound in Appendix 5.

Chart 2: Scatter Plot of SNCI versus Total Equity

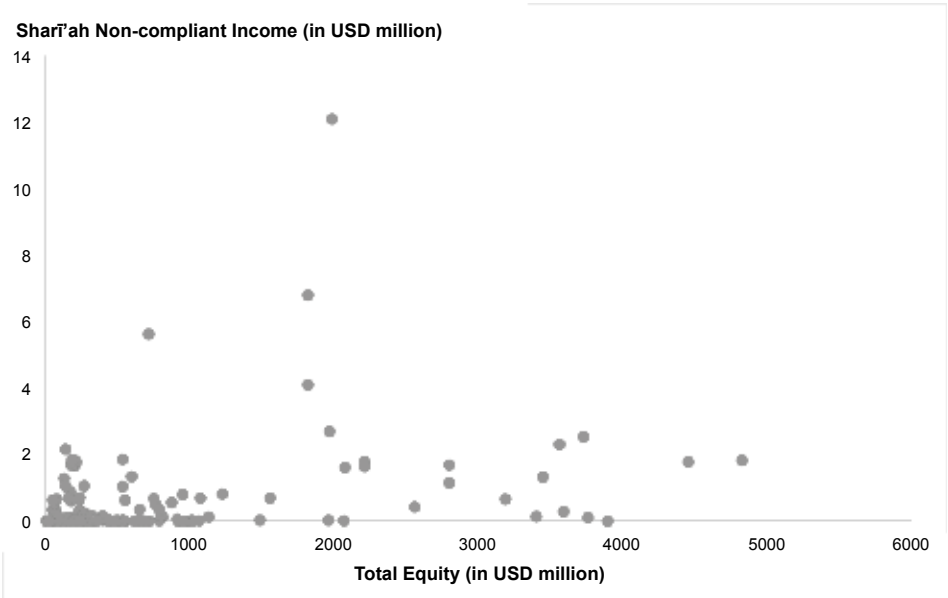
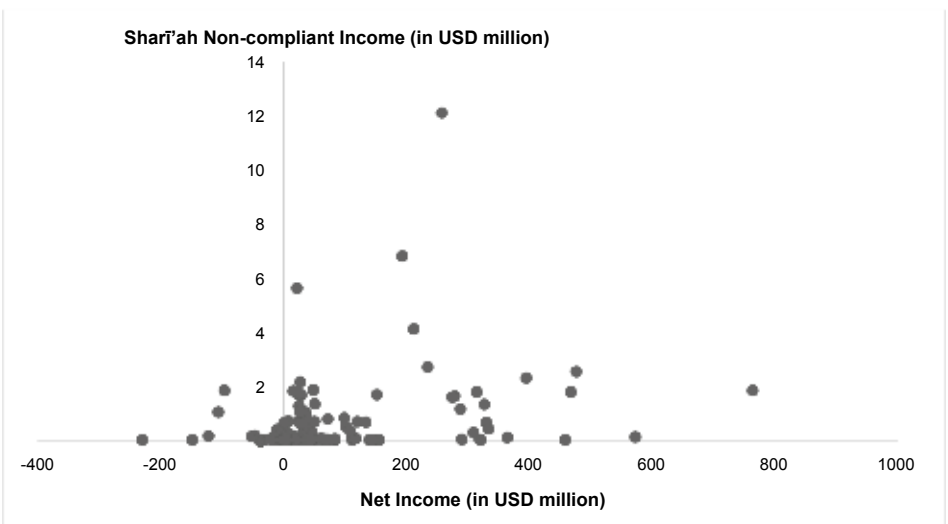


Chart 3: Scatter Plot of SNCI versus Net Income



The results of our analyses show that SNCI has no linearity with total assets, total equity and net income.

4.2.3 Regression analysis

The panel regression model is used to explain the direction and significance of the effect of SNCI on the three bank-specific variables, which are: (1) size of the bank (measured by lnTA); (2) profitability (measured by ROA); and (3) capitalisation (measured by total equity over total assets). Also, the Hausman test is performed to decide whether the fixed effect model (FEM) or random effect model (REM) is to be used for the panel regression analysis. In this case, due to unavailability of consistent data for a five years period, only 28 banks have been chosen for this analysis, as shown in Appendix 3. Models 1, 2 and 3, below, explain the effect of SNCI on the bank's size, profitability and capitalisation, respectively, as follows:

Model 1

$$\ln TA = c + SNCI\beta + ROA\beta + EQTA\beta + \ln GDP\beta$$

Note:

lnTA = *Return to natural logarithm of total assets*
SNCI = *Sharī'ah non-compliant income*
ROA = *Return on assets*
EQTA = *Total equity per total assets*
lnGDP = *Return to natural logarithm of gross domestic product per capita*

Model 2

$$ROA = c + SNCI\beta + \ln TA\beta + EQTA\beta + \ln GDP\beta$$

Note:

ROA = *Return on assets*
SNCI = *Sharī'ah non-compliant income*
lnTA = *Return to natural logarithm of total assets*
EQTA = *Total equity per total assets*
lnGDP = *Return to natural logarithm of gross domestic product per capita*

Model 3

EQTA = c + SNCIβ + *ln*TAβ + ROAβ + *ln*GDPβ

Note:

EQTA = *Total equity per total assets*
SNCI = *Sharī'ah non-compliant income*
lnTA = *Return to natural logarithm of total assets*
ROA = *Return on assets*
lnGDP = *Return to natural logarithm of gross domestic product per capita*

Based on the models, the results of the panel regression are set out in Table 5.

Table 5: Results of the Panel Regression

	Model 1		**Model 2**		**Model 3**	
	ln TA		**ROA**		**EQTA**	
	Coef.	P > (t)	Coef.	P > (t)	Coef.	P > (t)
SNCI	–0.000	0.557	0.000	0.585	–0.000	0.432
lnTA	–	–	0.143	0.407	–0.082	0.000
ROA	–0.028	0.083	–	–	–0.007	0.000
EQTA	–5.340	0.000	–6.072	0.035	–	–
lnGDP	0.982	0.000	–0.072	0.703	0.047	0.043
Constant	13.516	0.000	–1.205	0.686	1.489	0.000
R-squared	98%		0.08%		89%	

Table 5 summarises the results of Models 1, 2 and 3. In Model 1, the R-squared is 98%, 0.08% and 89% for Models 1, 2 and 3, respectively. Hence, Model 2 has a very small R-squared (i.e. the prediction of the model is very small) compared to Models 1 and 3. However, it is found that for all of the models, the SNCI has no significant positive impact on the bank's size, profitability and capitalisation. Hence, it can be concluded that there is no significant positive impact of SNCI on the size, profitability and capitalisation of the banks. This is well supported by the earlier analysis, which shows that the amount of SNCI is insignificant for the Islamic banks. This insignificant amount failed to show any effect on the dependent variables.

4.3 Stress Testing

Stress testing has become an important risk management tool that enables banks, whether conventional or Islamic, to assess the impact of adverse events on their financial positions and business model. Stress testing is important for those events defined as tail risk events. Tail risk events cause losses only rarely, but when those losses materialise they often exceed any plausible initial capital.[132]

The field of stress testing in the area of operational risk is still underdeveloped because of the limited data on operational risk events in banks. In terms of stress tests for Islamic banks, a specificity for operational risk would be accounting for such Sharī'ah non-compliance events and their potential impact on the profitability and capital adequacy of the tested Islamic banks. However, for any meaningful operational risk stress tests encompassing SNCRs, it is crucial to be able to identify the worst possible impact on capital adequacy and profitability of an IIFS due to a Sharī'ah non-compliance event. Furthermore, the event should have been material enough to inflict any sizeable adverse impact on the IIFS's profitability and capital adequacy, thus justifying its consideration in the operational risk stress tests. As seen in the data analysis, the level of the SNCI is negligible in most cases and it should be noted that not all SNCR events result in financial loss; most such events can be rectified or purified without implications for capital adequacy. As mentioned, the losses from SNCI commonly do not cover a tail risk event. While Islamic banks have been fortunate in not experiencing an SNCR event that has led to insolvency, it is useful to analyse the tail risk event under extreme but plausible stress scenarios.

For the purpose of this study, two different extreme SNCR event scenarios with a very low probability of occurrence have been defined based on expert judgment. (The balance sheet structure or business model of the Islamic banks is ignored.) It is assumed that data points of Islamic banks (202 data points from 51 Islamic banks from 11 countries) in which SNCI was disclosed and which were involved in the data analysis are identical, and that their financing is based on only one Sharī'ah-compliant contract.

In the first scenario, we define a scenario in line with the definition of tail risk, involving a movement of more than three standard deviations (SD). We get the whole data points standard deviation of SNCI/Net Income from Investing

[132] E. Perotti, L. Ratnovski and R. Vlahu, "Capital Regulation and Tail Risk", *IMF Working Papers*, WP/11/188 (2011).

Activities and increase the SNCI of Islamic banks by three times SD of this value ($SNCI_{current}$ + (3 SD*Net Income from Investing Activities)).

In the second scenario, we define an event in which 20% of contracts comprising the total contract value have become *bāṭil*/ invalid, and the same proportion of its profit has been deemed as SNCI by the Sharī'ah boards of the relevant Islamic banks. The void contracts have increased operational expenses by 10% because of the processes used to rectify and renew the contracts. This second scenario is more severe than the first and may be assumed to be a severe stress scenario.

In both scenarios, the reputational risk of Islamic banks has been ignored for the purpose of showing only the effects of SNCR on their capital adequacy level. As mentioned earlier in this paper, the capital requirements for reputational risk are considered under Pillar 2 (supervisory review process).

4.3.1 Analysing the results

Three steps were followed in calculating the stressed SNCI level and its impact on CAR:

1. The scenario-based SNCI was calculated (an additional loss for Islamic banks).
2. A check was conducted to determine whether the total additional loss from the scenarios was bigger than the total income. If it was not bigger than the net income or profit before tax, the loss can be covered by net income and there is no impact on CAR.
3. If the loss is bigger than the net income, its impact on CAR was calculated.

$$CAR\ after\ shock = CAR\ before\ shock - \left(\frac{Net\ Loss^{*}}{Risk\text{-}Weighted\ Assets}\right)$$

**If the SNCI after shock is bigger than net income, the loss has been covered by net income. It doesn't affect the CAR level. If the loss is bigger than net income, then net loss for the scenario has been calculated by subtracting the net income from the SNCI level. If the net income level is negative, net loss is the same as the SNCI level after the shock.*

Scenario 1

The first scenario is based mainly on the disclosed SNCI income and increase in SNCI based on three times the standard deviation of SNCI/Income from financing and investing activities. The standard deviation of the SNCI/Income from financing and investing activities is 1.3%. The shocked SNCI level is three times higher than the standard deviation of the data, which is almost 4% of net income from financing and investing activities. Total SNCI is the sum of actual SNCI disclosed by the Islamic bank and almost 4% of its net income from financing and investing activities.

For the results, risk-weighted assets are assumed to remain the same after the shock. Based on the scenario analysis results, 39 data points from 202 points are affected by the shock. The remaining 163 data points, total SNCI, can be covered by profit before tax. The maximum impact on CAR is 0.65 in cases where the net profit before tax can cover the loss from SNCI. To analyse more conservative results, profits were also assumed to be zero for this scenario. The maximum impact on CAR is 1.32 in this case. The minimum CARs after the shock in the two cases are 10.6 and 10.25, respectively. The minimum CARs are still higher than 8% (the hurdle rate of CAR). Descriptive statistics of the two cases are given in Appendix 6.

Scenario 2

The second scenario assumes that 20% of the total contract value has become *bāṭil*/invalid, that the same proportion of its profit has been deemed as SNCI by the Sharī'ah boards of the Islamic banks, and that the void contracts have increased operational expenses by 10%. In this scenario, the level of SNCI disclosed is ignored and the new SNCI level is the sum of the 20% of income from investing activities of Islamic banks which is forfeited because of contracts becoming invalid and the 10% increase in the operating expenses of Islamic banks arising from purifying or renewing the contracts.

Based on this severe stress scenario, 111 data points out of a total of 202 points are affected by the shock. The remaining 91 data points, total SNCI, can be covered by profit before tax. The maximum impact on CAR is 4.9 in both cases, whether or not net profit before tax can cover the loss from SNCI. The minimum CAR after the shock in both cases is 7.14. Average CARs for the two cases are 19.2 and 18.6, respectively. Only 2 data points' of stressed CAR is under the 8% (the hurdle rate of CAR). Descriptive statistics of the two cases are given in Appendix 6.

As a result, premised on the above findings from scenario analysis, it can be concluded that even at extreme SNCI levels, the total impact on CAR is very limited. These results also support the findings in Section 4.2.

SECTION 5: CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Main Findings and Considerations

Based on the available data on SNCI and its analysis in Section 4, it is apparent that the level of SNCI is negligible in most cases. The scenario analysis also demonstrated that even without taking into account the disclosed SNCI, the impact of severe stress scenarios on CAR is rather limited. These results lead to the conclusion that **the application of an additional capital charge to cover SNCR in Islamic banks will not serve the purpose.** Rather, the utilisation of **tools available to RSAs under the supervisory review process is a more effective mechanism for dealing with individual instances of a high level of SNCR.** This practice has been followed by RSAs in dealing with major operational risk events in large conventional banks in the advanced economies in recent years.

It can also be deduced from the analysis in Section 4 that **the current methods used to calculate operational risk for capital requirements adequately cover the wider set of operational risks faced by Islamic banks, including the SNCI.** As mentioned earlier, **not all SNCR events result in financial loss, as most such events can be rectified or purified**.

5.2 Policy Options and Guidance for RSAs to Address SNCR in Capital Adequacy Calculations

Considering the limitations of this research mentioned in the earlier sections and the importance of the SNCR for Islamic banks, the identification and measurement of SNCR needs to be undertaken carefully. **RSAs and Islamic banks should ensure that they collect adequate information on material developments in the SNCR, including pertinent information on current and emerging SNCR exposures and vulnerabilities.** The main challenge is the quality and comprehensiveness of the SNCR information that an RSA receives or an Islamic bank provides. They should also ensure that Islamic banks' SNCR risk information and monitoring systems are reliable and robust. **It is also crucial to set up key risk indicators for identifying the SNCR inherent in different kinds of Sharī'ah-compliant contracts, and to outline a set of variables that help to estimate the likelihood and severity of SNCR.**

Furthermore, SNCR may also lead **to reputational risk, which is excluded from the definition of operational risk for capital charge under Pillar 1**. It is possible for Islamic banks to become insolvent because of the reputational risk

that is triggered by the SNCR. Therefore, the **SNCR can be evaluated under Pillar 2 (Supervisory Review Process) by the RSAs.** Pillar 2 provides a more effective tool for RSAs to use in dealing with this subject, as outlined in IFSB-16. This standard delineates that **RSAs have discretion to impose additional capital charges for operational risk as the authority deems fit, either collectively as a market or individually at the Islamic bank level.**

The assessment as part of the internal capital adequacy assessment programme (ICAAP) made by RSAs for the purpose of evaluating the impact of SNCR should **include a combination of qualitative and quantitative approaches, including stress testing** (through scenario analysis by incorporating the impact of a plausible event on the bank's capital), **that incorporate management experience and judgment**.

In order for SNCR to be quantifiable (in the absence of proper disclosures and/or a database of prior incidents), **RSAs need to focus more on establishing control processes that specify how to assess and mitigate the SNCR of an Islamic bank**. RSAs should **use available remedial and, if necessary, enforcement tools** for dealing with inadequate management of SNCR. **RSAs can also use independent assessment of Sharī'ah governance and controls in an Islamic bank by external auditors**. Similarly, **a Sharī'ah ratings approach adopted by various credit rating agencies** can provide a useful tool for collecting additional information.[133] Whatever approach is taken, both quantitative as well as qualitative factors should be adequately considered in order to make an informed decision.

In addition, **the BCBS's proposed framework for a revised, simpler approach to calculating the operational risk capital charge could provide a more risk-sensitive measure.** It would be possible to adapt the new framework to Islamic banks, with suitable modifications. The new framework's proxy business indicator, which comprises the three macro-components of a bank's income statement **with size-based coefficients** instead of the business line-based beta factors, may be modified based on the key features of the Islamic bank's income statement. The new components of the BI and size-based coefficients need to be carefully analysed in the light of available data on SNCI as criteria for assigning the buckets. **It may be possible to set up some key risk indicators for SNCR, which would help RSAs to evaluate the impact of the risk on the soundness of Islamic banks.** For this purpose, the **IFSB plans to base future revisions**

[133] An example of such a rating is the Sharī'ah Quality Rating Methodology adopted by the Islamic International Rating Agency (IIRA). Such a rating is not related to the solvency or financial capability of the institution, or to the credit quality of securities or financial products. Rather, it is concerned with issuing an independent opinion about Sharī'ah quality for financial institutions, securities or financial products. For details, see www.iirating.com/.

of its operational framework for Islamic banks on an extensive quantitative impact study on the various components of operational risk, including SNCR, in the IFSB member countries.

5.3 Role of Effective Sharī'ah Governance and Disclosure Regimes

Apart from purely technical considerations of capital adequacy calculations, **it is important to consider SNCR as one of the main risks that the RSAs and Islamic banks must take into account as part of their enterprise-level risk evaluation**. Islamic banks should be aware of the implications of SNCR for the overall enterprise when Sharī'ah requirements and rulings are not effectively communicated, translated into internal policies, or observed by the institution across different businesses and functional units.

Sharī'ah compliance is the core element of the operation of Islamic banks. It gives legitimacy to the practices of Islamic banking and finance. The existence of a Sharī'ah non-compliant element would not only affect the confidence of the public in Islamic finance, but might also expose IIFS to reputational risk. Eventually, any failure, or even major deficiency, in the Sharī'ah compliance aspects will surely distress the market and reduce stakeholders' confidence in Islamic finance as a whole.[134] **Hence, compliance with the Sharī'ah principles is achieved by having an effective and comprehensive Sharī'ah governance system, which is the distinctive feature of Islamic finance.** As outlined in IFSB-10, "Sharī'ah governance system" refers to "a set of institutional and organisational arrangements through which institutions offering Islamic financial services ensure that there is an effective independent oversight of Sharī'ah compliance over the issuance of relevant Sharī'ah pronouncements or *fatwā*, dissemination of information and an internal Sharī'ah compliance review". **The implementation of IFSB-10 and other best practices will help ensure that all Islamic banks operate within Sharī'ah rules and principles as approved by their respective Sharī'ah boards and reviewed by independent Sharī'ah oversight functions.**

The study also highlighted the issues and challenges in the disclosure practices of Islamic banks. The analysis in Section 4 demonstrated that, **in the absence of a consistent and elaborate regulatory disclosure requirement on SNCI, relevant data either remains unreported or is reported in a manner that does not provide sufficient information** to the stakeholders for assessing the SNCR. **In line with the recommendations of IFSB-4, RSAs should provide a**

---

[134] A. Hasan and R. Sabirzyanov, "Optimal Sharī'ah Governance Model in Islamic Finance Regulation", *International Journal of Education and Research*, Vol. 3, No. 4, 2015, pp. 243–58.

detailed and well-rounded set of guidelines for the disclosure requirements on SNCR. Specifically, IFSB-4 suggests that Islamic banks disclose the inflows and outflows of Sharī'ah non-compliant earnings and expenditure, with an explanation of how they are disposed of. Moreover, it suggests the disclosure of the nature, size and number of violations of Sharī'ah compliance during the year.[135] Based on the findings of this study, it is further proposed that the ***Sharī'ah* board statement on SNCI be made more explicit**, with a clear mention of earnings realised from sources or by means prohibited by the Sharī'ah principles. **A statement of "sources and uses of the charity account"** will also provide a useful tool for the stakeholders to assess the magnitude and historical trend of non Sharī'ah-compliant income over the years.

[135] The IFSB plans to commence the revision of IFSB-4 in order to accommodate global regulatory developments since the Global Financial Crisis and changes in the products and services offered by the Islamic banking sector, as well as to include consumer protection aspects. This new standard, which has been approved by the IFSB Council as part of its *Strategic Performance Plan 2016–2018*, will further enhance the guidance for Islamic banks and RSAs on disclosure and transparency regimes.

APPENDIX

Appendix 1: Details of Data Collection for the Study

No.	Country	No. of Islamic Banks	No. of Data Points
1	UAE	4	20
2	Bangladesh	2	6
3	Bahrain	6	29
4	Indonesia	10	39
5	Malaysia	17	57
6	Oman	2	3
7	Pakistan	5	25
8	Palestine	2	10
9	Qatar	1	4
10	Sudan	1	5
11	Yemen	1	4
		51	**202**

Appendix 2: Financial Data of 51 Islamic Banks for 2010–2014

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
1	2014	41,886,810,377.31	2,068,383,436.92	321,144,497.11	8,256.88	0.767	24.458	0.049	9.333
1	2013	38,109,616,233.04	1,961,176,380.23	319,762,318.32	16,507.94	0.839	24.364	0.051	9.303
1	2012	29,896,478,477.43	1,486,250,533.41	289,801,524.13	24,595.47	0.969	24.121	0.050	9.291
2	2014	33,733,804,900.06	4,821,266,108.91	763,430,896.11	1,825,613.08	2.263	24.242	0.143	10.691
2	2013	30,847,760,006.58	4,449,884,220.98	467,801,219.64	1,771,117.17	1.516	24.152	0.144	10.665
2	2012	26,851,245,419.31	3,183,907,381.35	330,401,629.75	653,950.95	1.230	24.014	0.119	10.639
2	2011	24,666,711,749.45	2,797,304,254.66	287,651,460.09	1,144,414.17	1.166	23.929	0.113	10.594
2	2010	24,474,962,262.33	2,797,304,254.66	152,294,075.75	1,689,373.30	0.622	23.921	0.114	10.444
3	2014	30,470,741,631.31	3,726,807,306.68	476,705,235.87	2,526,975.48	1.564	24.140	0.122	10.691
3	2013	28,089,992,851.51	3,559,945,497.95	394,880,866.55	2,298,365.12	1.406	24.059	0.127	10.665
3	2012	23,440,108,632.96	3,445,037,398.60	327,079,642.05	1,322,343.32	1.395	23.878	0.147	10.639
3	2011	20,241,007,242.27	2,208,495,548.40	314,526,885.22	1,778,746.59	1.554	23.731	0.109	10.594
3	2010	20,492,198,525.81	2,208,495,548.40	278,692,985.04	1,634,877.38	1.360	23.743	0.108	10.444
4	2014	26,402,885,905.85	3,893,324,366.11	458,379,143.28	0.00	1.736	23.997	0.147	11.480
4	2013	21,251,154,884.82	3,756,236,447.33	364,175,841.98	103,846.15	1.714	23.780	0.177	11.473
4	2012	20,107,720,763.00	3,585,439,735.68	309,258,256.87	274,725.27	1.538	23.724	0.178	11.455
4	2011	16,012,665,617.80	2,558,159,465.69	334,011,005.34	412,087.91	2.086	23.497	0.160	11.398
5	2012	25,896,380,378.14	3,399,470,298.70	572,736,488.39	125,272.92	2.212	23.977	0.131	9.291
6	2014	23,463,600,000.00	2,074,600,000.00	274,800,000.00	1,600,000.00	1.171	23.879	0.088	10.121
6	2013	20,967,600,000.00	1,983,400,000.00	257,800,000.00	12,100,000.00	1.230	23.766	0.095	10.101
6	2012	19,055,100,000.00	1,967,700,000.00	235,200,000.00	2,700,000.00	1.234	23.671	0.103	10.046
6	2011	17,154,000,000.00	1,816,600,000.00	212,300,000.00	4,100,000.00	1.238	23.565	0.106	10.010
6	2010	15,878,300,000.00	1,816,600,000.00	193,200,000.00	6,800,000.00	1.217	23.488	0.114	9.923
7	2014	14,267,181,909.23	918,884,134.41	111,959,944.51	0.00	0.785	23.381	0.064	9.333
7	2013	15,061,161,737.11	813,926,594.87	111,412,468.86	116,236.48	0.740	23.435	0.054	9.303

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
8	2014	13,110,357,856.97	1,067,124,480.06	146,065,810.56	1,027.53	1.114	23.297	0.081	9.333
8	2013	13,046,290,397.87	1,013,804,708.46	148,011,586.78	16,099.50	1.135	23.292	0.078	9.303
8	2012	12,236,503,957.16	1,014,615,964.53	139,718,144.26	831.93	1.142	23.228	0.083	9.291
8	2011	10,137,645,560.67	912,481,372.55	118,130,311.42	59,409.12	1.165	23.040	0.090	9.252
8	2010	9,425,549,689.44	787,500,931.68	155,741,304.35	2,599.09	1.652	22.967	0.084	9.923
9	2014	11,685,010,069.12	1,224,887,663.82	99,169,501.86	813,351.50	0.849	23.182	0.105	10.691
9	2013	10,828,863,040.72	1,132,062,613.89	37,985,023.36	108,719.35	0.351	23.105	0.105	10.665
9	2012	10,146,711,925.79	713,955,062.81	22,083,049.43	5,616,348.77	0.218	23.040	0.070	10.639
9	2011	6,192,021,708.33	797,059,214.28	(122,151,121.73)	155,040.87	-1.973	22.547	0.129	10.594
9	2010	8,916,677,903.97	797,059,214.28	16,147,038.61	173,569.48	0.181	22.911	0.089	10.444
10	2014	11,275,125,799.08	1,555,861,111.13	24,533,696.09	687,465.94	0.218	23.146	0.138	10.691
10	2013	10,539,223,833.89	1,071,123,200.06	120,299,522.02	691,280.65	1.141	23.078	0.102	10.665
10	2012	8,746,603,025.16	951,831,166.11	72,348,535.54	789,100.82	0.827	22.892	0.109	10.639
10	2011	7,692,607,122.37	536,174,261.70	49,012,933.37	1,847,956.40	0.637	22.764	0.070	10.594
10	2010	7,023,172,140.71	536,174,261.70	35,697,753.14	1,031,607.63	0.508	22.672	0.076	10.444
11	2014	10,916,223,345.14	758,683,845.81	101,230,330.61	504,607.03	0.927	23.114	0.070	9.333
11	2013	10,505,135,323.06	789,699,868.19	108,791,716.04	337,451.75	1.036	23.075	0.075	9.303
11	2012	9,581,564,935.05	748,389,629.27	134,094,104.75	679,334.30	1.400	22.983	0.078	9.291
11	2011	9,268,114,558.03	685,729,411.76	143,689,014.55	15,772.22	1.550	22.950	0.074	9.252
12	2014	10,685,268,206.46	649,239,864.61	63,715,860.56	34,740.06	0.596	23.092	0.061	9.333
12	2013	10,772,617,025.10	719,473,739.11	72,296,157.74	0.00	0.671	23.100	0.067	9.303
12	2012	10,524,590,817.92	688,651,422.25	83,600,450.06	0.00	0.794	23.077	0.065	9.291
13	2014	10,332,990,145.83	644,463,529.30	64,177,397.27	0.00	0.621	23.059	0.062	9.333
13	2013	8,877,373,554.93	617,735,819.56	50,738,993.61	0.00	0.572	22.907	0.070	9.303
13	2012	8,373,835,148.85	553,804,401.91	50,976,032.51	0.00	0.609	22.848	0.066	9.291
13	2011	7,129,461,744.48	438,281,372.55	48,095,687.68	0.00	0.675	22.688	0.061	9.252

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
13	2010	4,071,993,788.82	305,796,583.85	73,309,006.21	0.00	1.800	22.127	0.075	9.113
14	2014	8,141,169,892.44	597,626,160.27	50,897,121.11	1,331,280.29	0.625	22.820	0.073	6.991
15	2014	6,789,471,962.50	479,800,648.28	71,826,817.38	10,476.18	1.058	22.639	0.071	9.333
15	2013	6,836,086,368.80	425,578,113.13	71,322,952.80	34,175.68	1.043	22.645	0.062	9.303
16	2014	6,037,400,672.26	499,044,791.28	24,027,982.89	0.00	0.398	22.521	0.083	9.333
16	2013	6,137,891,780.89	534,067,596.10	46,382,130.83	20,259.05	0.756	22.538	0.087	9.303
17	2014	5,381,223,445.82	396,863,249.83	5,769,935.49	137,966.77	0.107	22.406	0.074	8.158
17	2013	5,247,794,197.83	398,884,173.30	53,428,503.18	18,281.13	1.018	22.381	0.076	8.195
17	2012	5,608,003,815.40	432,336,098.14	83,318,615.65	48,325.26	1.486	22.447	0.077	8.216
17	2011	5,367,440,375.73	224,737,513.66	60,770,841.68	69,576.17	1.132	22.404	0.042	8.202
17	2010	3,612,709,683.40	224,737,513.66	46,548,770.65	61,773.40	1.288	22.008	0.062	8.047
18	2014	5,200,266,036.80	874,468,098.45	42,021,277.24	555,263.16	0.808	22.372	0.168	10.121
18	2013	2,894,414,937.78	654,521,286.58	32,978,723.91	342,105.26	1.139	21.786	0.226	10.101
18	2012	2,505,851,102.07	553,457,455.25	27,393,617.44	621,052.63	1.093	21.642	0.221	10.046
18	2011	2,457,180,888.56	536,968,093.30	1,329,787.25	18,421.05	0.054	21.622	0.219	10.010
18	2010	2,278,191,524.12	536,968,093.30	19,414,893.91	21,052.63	0.852	21.547	0.236	9.923
19	2014	5,017,146,127.32	323,472,657.53	4,598,070.58	137,966.77	0.092	22.336	0.064	8.158
19	2013	4,407,580,776.17	272,475,193.09	13,545,000.11	91,279.31	0.307	22.207	0.062	8.195
19	2012	4,638,510,934.87	254,188,215.16	40,268,873.47	243,029.14	0.868	22.258	0.055	8.216
19	2011	3,581,771,013.56	194,550,104.24	30,172,033.11	24.94	0.842	21.999	0.054	8.202
19	2010	2,380,246,896.24	194,550,104.24	19,007,896.65	18.06	0.799	21.590	0.082	8.047
20	2014	4,687,238,985.37	377,310,449.34	40,572,246.69	49,541.28	0.866	22.268	0.080	9.333
20	2013	4,438,336,327.96	358,799,345.84	43,882,372.86	22,857.14	0.989	22.214	0.081	9.303
20	2012	3,971,552,829.00	339,992,806.94	43,553,608.27	10,355.99	1.097	22.102	0.086	8.216
21	2014	4,354,074,929.61	237,687,023.85	45,492,192.23	328,882.29	1.045	22.194	0.055	7.183
21	2013	3,120,087,503.38	178,970,082.82	37,442,041.73	596,192.07	1.200	21.861	0.057	7.151

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
21	2012	2,825,278,252.72	170,510,249.61	36,115,307.69	885,481.80	1.278	21.762	0.060	7.144
21	2011	2,322,798,170.03	159,675,133.19	50,455,177.21	684,387.31	2.172	21.566	0.069	7.115
21	2010	1,816,556,227.26	130,062,108.23	24,967,249.68	1,269,245.22	1.374	21.320	0.072	6.950
22	2014	3,941,489,421.84	959,840,440.18	13,563,829.99	0.00	0.344	22.095	0.244	10.121
22	2013	4,162,500,063.51	978,191,504.29	15,159,574.70	0.00	0.364	22.149	0.235	10.101
22	2012	3,918,883,038.52	1,015,425,547.41	25,797,872.73	0.00	0.658	22.089	0.259	10.046
22	2011	4,088,829,849.62	957,978,738.02	18,085,106.66	0.00	0.442	22.132	0.234	10.010
22	2010	3,847,606,441.69	957,978,738.02	19,680,851.36	0.00	0.512	22.071	0.249	9.923
23	2014	3,910,844,123.55	225,693,851.85	20,171,674.13	27,190.21	0.516	22.087	0.058	9.333
23	2013	3,085,692,658.54	181,380,474.47	32,759,410.29	38,621.27	1.062	21.850	0.059	9.303
23	2012	2,275,545,240.72	154,268,711.59	15,073,733.79	4,854.37	0.662	21.545	0.068	8.216
24	2014	3,640,429,240.97	221,087,270.95	19,055,794.29	13,870.10	0.523	22.015	0.061	9.333
24	2013	3,757,854,809.99	214,871,257.64	18,040,531.06	591.32	0.480	22.047	0.057	9.303
24	2012	3,833,534,975.76	214,302,063.54	24,229,146.95	7,308.00	0.632	22.067	0.056	9.291
24	2011	3,314,793,825.13	157,283,660.00	15,738,117.69	94,907.77	0.475	21.922	0.047	9.252
25	2013	2,880,054,983.51	484,412,638.14	29,772,971.03	0.00	1.034	21.781	0.168	9.303
25	2012	2,885,328,454.47	496,779,257.14	19,782,231.99	20,388.35	0.686	21.783	0.172	9.291
25	2011	3,186,087,498.62	480,568,954.00	(148,441,926.10)	0.00	-4.659	21.882	0.151	9.252
26	2014	2,772,274,721.07	160,200,288.61	2,947,067.28	0.00	0.106	21.743	0.058	9.333
26	2013	2,499,101,134.16	167,514,863.60	14,718,879.23	21,433.65	0.589	21.639	0.067	9.303
26	2012	2,396,723,673.36	177,745,806.74	17,068,305.95	0.00	0.712	21.597	0.074	9.291
26	2011	1,872,961,910.63	143,408,460.80	13,503,304.98	0.00	0.721	21.351	0.077	9.252
26	2010	1,320,447,510.12	143,408,460.80	15,404,572.34	0.00	1.167	21.001	0.109	9.113
27	2014	2,668,165,537.61	232,965,234.38	29,827,042.04	643,869.14	1.118	21.705	0.087	6.991
27	2013	2,203,009,609.37	206,959,482.06	29,282,314.62	1,662,099.87	1.329	21.513	0.094	6.861
27	2012	1,848,312,932.96	175,963,905.69	24,363,211.95	1,680,185.68	1.318	21.338	0.095	6.756

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
27	2011	1,290,067,934.09	138,380,796.63	26,862,823.84	1,041,807.15	2.082	20.978	0.107	6.732
27	2010	1,034,640,413.44	138,380,796.63	27,689,162.91	2,153,625.27	2.676	20.757	0.134	6.634
28	2014	2,474,828,423.35	176,859,945.71	16,251,849.57	75,104.89	0.657	21.629	0.071	9.333
28	2013	2,261,067,687.60	191,555,752.70	16,735,504.99	85,977.14	0.740	21.539	0.085	9.303
29	2013	2,443,913,178.54	263,681,419.87	6,412,583.22	0.00	0.262	21.617	0.108	7.250
29	2012	2,098,048,315.52	284,521,384.62	11,403,508.84	31,644.86	0.544	21.464	0.136	7.162
29	2011	1,675,110,923.34	238,058,943.83	(8,540,224.88)	33,155.25	-0.510	21.239	0.142	7.156
29	2010	1,778,191,376.79	238,058,943.83	1,536,950.49	24,809.30	0.086	21.299	0.134	7.178
30	2014	2,327,659,609.99	210,372,343.64	24,734,042.93	1,734,210.53	1.063	21.568	0.090	10.121
30	2013	2,421,010,675.24	207,712,769.13	16,223,404.50	1,807,894.74	0.670	21.607	0.086	10.101
30	2012	2,214,893,650.82	185,638,300.70	(96,276,597.21)	1,826,315.79	-4.347	21.518	0.084	10.046
30	2011	2,231,648,970.22	266,223,408.32	(46,276,596.45)	176,315.79	-2.074	21.526	0.119	10.010
30	2010	2,488,563,867.76	266,223,408.32	(105,585,107.99)	1,047,368.42	-4.243	21.635	0.107	9.923
31	2014	2,080,371,992.18	206,208,873.01	1,373,390.58	25,688.07	0.066	21.456	0.099	9.333
31	2013	2,058,388,025.65	218,162,435.61	944,689.97	11,428.57	0.046	21.445	0.106	9.303
31	2012	2,244,645,721.34	233,070,660.50	4,512,310.77	42,394.82	0.201	21.532	0.104	9.291
31	2011	1,929,902,420.45	235,252,142.61	1,227,573.18	276,470.59	0.064	21.381	0.122	9.252
31	2010	1,919,117,837.19	235,252,142.61	7,945,516.26	698,891.30	0.414	21.375	0.123	9.113
32	2014	1,681,089,067.83	249,422,326.68	39,801,078.85	2,613.24	2.368	21.243	0.148	7.537
32	2013	1,427,771,399.83	195,635,388.61	26,616,104.20	1,050.42	1.864	21.079	0.137	7.454
32	2012	1,534,901,023.76	229,672,087.97	42,675,633.13	3,921.57	2.780	21.152	0.150	7.416
32	2011	1,870,484,565.23	237,391,234.27	23,534,686.27	5,243.45	1.258	21.349	0.127	7.376
32	2010	1,625,322,268.62	237,391,234.27	24,532,710.28	4,329.00	1.509	21.209	0.146	7.259
33	2014	1,635,305,409.22	137,282,953.41	530,546.61	13,569.08	0.032	21.215	0.084	8.158
33	2013	1,427,590,505.70	139,314,141.09	10,632,537.95	32,214.15	0.745	21.079	0.098	8.195
33	2012	1,456,970,034.38	110,506,723.64	10,537,745.78	5,007.12	0.723	21.100	0.076	8.216

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
33	2011	1,235,200,688.70	106,217,327.67	1,290,251.42	3,078.53	0.104	20.934	0.086	8.202
33	2010	762,584,801.48	106,217,327.67	1,223,445.66	770.04	0.160	20.452	0.139	8.047
34	2014	1,574,265,981.47	274,087,770.14	8,101,063.95	234,210.53	0.515	21.177	0.174	10.121
34	2013	1,442,133,000.73	265,986,706.19	(51,087,766.74)	136,842.11	-3.543	21.089	0.184	10.101
34	2012	1,258,401,614.95	317,680,855.91	1,997,340.46	15,789.47	0.159	20.953	0.252	10.046
34	2011	1,190,199,486.25	314,250,004.80	1,377,659.60	18,421.05	0.116	20.897	0.264	10.010
34	2010	1,114,936,187.23	314,250,004.80	(17,375,000.27)	94,736.84	-1.558	20.832	0.282	9.923
35	2014	1,566,889,977.52	156,752,406.11	13,123,070.28	84.28	0.838	21.172	0.100	8.158
35	2013	1,206,703,139.69	107,037,496.97	9,636,722.01	11,566.51	0.799	20.911	0.089	8.195
35	2012	1,100,859,687.25	122,773,321.57	10,536,918.48	67,755.15	0.957	20.819	0.112	8.216
35	2011	933,710,507.60	116,944,721.65	7,317,379.70	0.00	0.784	20.655	0.125	8.202
35	2010	711,258,364.30	116,944,721.65	4,060,949.81	0.00	0.571	20.383	0.164	8.047
36	2014	1,015,258,992.36	68,413,981.92	3,119,680.76	88,476.76	0.307	20.738	0.067	7.183
36	2013	821,371,542.71	59,103,125.87	1,786,559.21	131,595.00	0.218	20.526	0.072	7.151
36	2012	763,314,596.12	57,563,565.16	3,206,840.84	134,207.71	0.420	20.453	0.075	7.144
36	2011	681,275,353.25	61,531,596.02	7,048,725.97	55,663.66	1.035	20.339	0.090	7.115
36	2010	528,650,111.52	55,950,064.56	522,866.53	67,730.95	0.099	20.086	0.106	6.950
37	2014	1,010,890,045.69	74,051,107.69	5,977,563.17	126,577.65	0.591	20.734	0.073	7.183
37	2013	759,444,744.87	65,883,155.92	1,295,444.68	85,191.38	0.171	20.448	0.087	7.151
37	2012	653,820,799.05	70,788,309.11	3,548,629.33	114,785.87	0.543	20.298	0.108	7.144
37	2011	535,706,605.02	72,203,486.22	2,117,421.80	160,145.93	0.395	20.099	0.135	7.115
37	2010	468,232,609.46	70,998,227.49	208,134.76	246,554.76	0.044	19.964	0.152	6.950
38	2014	939,177,205.43	58,743,369.73	1,452,333.83	279,515.33	0.155	20.661	0.063	7.183
38	2013	830,441,548.02	55,339,807.03	(389,863.56)	254,826.33	-0.047	20.537	0.067	7.151
38	2012	790,889,197.00	64,474,871.52	(10,203,361.88)	386,734.48	-1.290	20.489	0.082	7.144
38	2011	840,223,291.64	75,567,326.85	5,567,546.91	663,585.82	0.663	20.549	0.090	7.115

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
38	2010	713,272,262.00	71,828,583.17	(18,456,473.76)	63,094.26	-2.588	20.385	0.101	6.950
39	2012	844,226,301.42	64,168,884.20	19,118,056.16	5,596.36	2.265	20.554	0.076	8.216
39	2011	613,659,243.83	49,671,623.28	5,940,306.49	8,779.50	0.968	20.235	0.081	8.202
39	2010	510,177,186.34	41,997,463.27	69,143,043.84	20,379.23	13.553	20.050	0.082	8.047
40	2014	658,272,825.53	343,415,606.61	(20,048,894.78)	10,713.16	-3.046	20.305	0.522	9.868
40	2013	509,744,866.32	361,799,481.87	(32,002,080.80)	2,484.21	-6.278	20.049	0.710	9.904
41	2014	595,259,900.00	67,539,700.00	7,537,600.00	28,671.00	1.266	20.205	0.113	7.995
41	2013	502,251,800.00	63,463,700.00	6,526,900.00	20,864.00	1.300	20.035	0.126	8.004
41	2012	423,109,300.00	57,906,500.00	5,826,000.00	20,948.00	1.377	19.863	0.137	7.931
41	2011	392,675,900.00	48,046,400.00	4,034,100.00	30,258.00	1.027	19.788	0.122	7.888
41	2010	357,351,100.00	48,046,400.00	1,594,500.00	12,634.00	0.446	19.694	0.134	7.757
42	2013	619,800,000.00	239,800,000.00	(1,000,000.00)	0.00	-0.161	20.245	0.387	10.101
42	2012	442,200,000.00	195,900,000.00	(39,800,000.00)	0.00	-9.000	19.907	0.443	10.046
42	2011	483,000,000.00	202,400,000.00	1,200,000.00	0.00	0.248	19.996	0.419	10.010
42	2010	727,900,000.00	202,400,000.00	(229,500,000.00)	0.00	-31.529	20.406	0.278	9.923
43	2014	561,900,000.00	67,700,000.00	4,100,000.00	206,719.00	0.730	20.147	0.120	7.995
43	2013	468,300,000.00	62,300,000.00	3,500,000.00	294,322.00	0.747	19.965	0.133	8.004
43	2012	375,200,000.00	57,200,000.00	600,000.00	214,492.00	0.160	19.743	0.152	7.931
43	2011	300,100,000.00	48,000,000.00	900,000.00	629,983.00	0.300	19.520	0.160	7.888
43	2010	285,700,000.00	48,000,000.00	(2,300,000.00)	320,811.00	-0.805	19.470	0.168	7.757
44	2012	221,352,857.84	50,844,158.03	3,836,484.03	0.00	1.733	19.215	0.230	8.216
44	2011	112,139,246.35	51,606,308.81	1,018,239.95	0.00	0.908	18.535	0.460	8.202
45	2012	442,098,973.17	65,366,598.80	1,496,690.82	426.14	0.339	19.907	0.148	8.216
45	2011	314,231,468.97	61,423,442.18	2,028,561.95	114.02	0.646	19.566	0.195	8.202
46	2014	339,347,405.82	47,817,519.05	(4,696,443.47)	110,049.46	-1.384	19.643	0.141	7.183

Bank #	Year	TA (USD)	TE (USD)	NI (USD)	SNCI (USD)	ROA (%)	lnTA	EQTA	ln GDP
46	2013	505,205,446.38	50,731,468.39	(10,721,247.80)	333,700.68	-2.122	20.040	0.100	7.151
46	2012	485,766,896.87	61,125,577.78	870,942.97	263,265.52	0.179	20.001	0.126	7.144
46	2011	320,185,649.76	67,229,302.76	(4,017,929.12)	187,572.39	-1.255	19.584	0.210	7.115
46	2010	207,485,456.04	50,780,408.50	(9,679,070.31)	77,239.11	-4.665	19.151	0.245	6.950
47	2014	311,101,952.33	237,644,994.83	(14,302,990.98)	2,318.42	-4.598	19.556	0.764	9.868
48	2013	167,480,423.26	25,721,298.89	1,042,005.13	84.28	0.622	18.936	0.154	8.195
48	2012	165,685,731.79	31,476,308.69	864,519.15	151.69	0.522	18.926	0.190	8.216
48	2011	134,218,910.80	35,502,761.90	746,890.15	35.69	0.556	18.715	0.265	8.202
49	2014	196,923,063.87	84,257,955.26	4,497,829.43	3,224.10	2.284	19.098	0.428	8.158
49	2013	188,692,352.87	81,402,579.25	3,393,797.82	36,845.38	1.799	19.056	0.431	8.195
49	2012	213,293,902.18	98,329,784.46	4,172,905.96	31,962.48	1.956	19.178	0.461	8.216
49	2011	186,695,961.25	98,526,754.10	4,440,780.71	34,177.82	2.379	19.045	0.528	8.202
50	2014	115,754,280.53	14,896,727.78	(1,556,720.20)	0.00	-1.345	18.567	0.129	8.158
50	2013	108,573,160.33	12,846,156.87	334,342.45	0.00	0.308	18.503	0.118	8.195
50	2012	97,153,259.10	15,773,940.28	1,051,085.85	0.00	1.082	18.392	0.162	8.216
50	2011	70,801,278.24	13,820,303.00	2,267,203.32	8,209.40	3.202	18.075	0.195	8.202
50	2010	36,961,947.89	8,170,130.57	1,174,861.92	0.00	3.179	17.425	0.221	8.047
51	2014	66,667,211.33	26,006,895.97	(3,466,867.01)	7,431.19	-5.200	18.015	0.390	9.333
51	2013	132,363,742.10	29,764,133.61	166,753.02	0.00	0.126	18.701	0.225	9.303
51	2012	186,743,910.28	30,716,607.31	1,131,609.07	6,979.94	0.606	19.045	0.164	9.291
51	2011	189,495,183.82	28,871,568.63	791,123.70	0.00	0.417	19.060	0.152	9.252
51	2010	152,428,260.87	25,626,397.52	3,733,229.81	0.00	2.449	18.842	0.168	9.113

Note:

TA = Total Asset
TE = Total Equity
NI = Net Income
SNCI = Sharī'ah non-compliant income
ROA = Return on assets
lnTA = Return to natural logarithm of total assets
EQTA = Total equity per total assets
lnGDP = Return to natural logarithm of gross domestic product per capita

Appendix 3: Financial Data of 28 Islamic Banks for 2010–2014

Bank #	Year	SNCI	ROA	lnTA	EQTA	lnGDP
1	2010	1,689,373.30	0.622	23.921	0.114	10.444
1	2011	1,144,414.17	1.166	23.929	0.113	10.594
1	2012	653,950.95	1.230	24.014	0.119	10.639
1	2013	1,771,117.17	1.516	24.152	0.144	10.665
1	2014	1,825,613.08	2.263	24.242	0.143	10.691
2	2010	1,634,877.38	1.360	23.743	0.108	10.444
2	2011	1,778,746.59	1.554	23.731	0.109	10.594
2	2012	1,322,343.32	1.395	23.878	0.147	10.639
2	2013	2,298,365.12	1.406	24.059	0.127	10.665
2	2014	2,526,975.48	1.564	24.140	0.122	10.691
3	2010	6,800,000.00	1.217	23.488	0.114	9.923
3	2011	4,100,000.00	1.238	23.565	0.106	10.010
3	2012	2,700,000.00	1.234	23.671	0.103	10.046
3	2013	12,100,000.00	1.230	23.766	0.095	10.101
3	2014	1,600,000.00	1.171	23.879	0.088	10.121
4	2010	2,599.09	1.652	22.967	0.084	9.923
4	2011	59,409.12	1.165	23.040	0.090	9.252
4	2012	831.93	1.142	23.228	0.083	9.291
4	2013	16,099.50	1.135	23.292	0.078	9.303
4	2014	1,027.53	1.114	23.297	0.081	9.333
5	2010	173,569.48	0.181	22.911	0.089	10.444
5	2011	155,040.87	-1.973	22.547	0.129	10.594
5	2012	5,616,348.77	0.218	23.040	0.070	10.639
5	2013	108,719.35	0.351	23.105	0.105	10.665
5	2014	813,351.50	0.849	23.182	0.105	10.691
6	2010	1,031,607.63	0.508	22.672	0.076	10.444
6	2011	1,847,956.40	0.637	22.764	0.070	10.594
6	2012	789,100.82	0.827	22.892	0.109	10.639
6	2013	691,280.65	1.141	23.078	0.102	10.665
6	2014	687,465.94	0.218	23.146	0.138	10.691
7	2010	0.00	1.800	22.127	0.075	9.113
7	2011	0.00	0.675	22.688	0.061	9.252
7	2012	0.00	0.609	22.848	0.066	9.291
7	2013	0.00	0.572	22.907	0.070	9.303
7	2014	0.00	0.621	23.059	0.062	9.333
8	2010	61,773.40	1.288	22.008	0.062	8.047
8	2011	69,576.17	1.132	22.404	0.042	8.202

Bank #	Year	SNCI	ROA	lnTA	EQTA	lnGDP
8	2012	48,325.26	1.486	22.447	0.077	8.216
8	2013	18,281.13	1.018	22.381	0.076	8.195
8	2014	137,966.77	0.107	22.406	0.074	8.158
9	2010	21,052.63	0.852	21.547	0.236	9.923
9	2011	18,421.05	0.054	21.622	0.219	10.010
9	2012	621,052.63	1.093	21.642	0.221	10.046
9	2013	342,105.26	1.139	21.786	0.226	10.101
9	2014	555,263.16	0.808	22.372	0.168	10.121
10	2010	18.06	0.799	21.590	0.082	8.047
10	2011	24.94	0.842	21.999	0.054	8.202
10	2012	243,029.14	0.868	22.258	0.055	8.216
10	2013	91,279.31	0.307	22.207	0.062	8.195
10	2014	137,966.77	0.092	22.336	0.064	8.158
11	2010	1,269,245.22	1.374	21.320	0.072	6.950
11	2011	684,387.31	2.172	21.566	0.069	7.115
11	2012	885,481.80	1.278	21.762	0.060	7.144
11	2013	596,192.07	1.200	21.861	0.057	7.151
11	2014	328,882.29	1.045	22.194	0.055	7.183
12	2010	0.00	0.512	22.071	0.249	9.923
12	2011	0.00	0.442	22.132	0.234	10.010
12	2012	0.00	0.658	22.089	0.259	10.046
12	2013	0.00	0.364	22.149	0.235	10.101
12	2014	0.00	0.344	22.095	0.244	10.121
13	2010	0.00	1.167	21.001	0.109	9.113
13	2011	0.00	0.721	21.351	0.077	9.252
13	2012	0.00	0.712	21.597	0.074	9.291
13	2013	21,433.65	0.589	21.639	0.067	9.303
13	2014	-	0.106	21.743	0.058	9.333
14	2010	2,153,625.27	2.676	20.757	0.134	6.634
14	2011	1,041,807.15	2.082	20.978	0.107	6.732
14	2012	1,680,185.68	1.318	21.338	0.095	6.756
14	2013	1,662,099.87	1.329	21.513	0.094	6.861
14	2014	643,869.14	1.118	21.705	0.087	6.991
15	2010	1,047,368.42	-4.243	21.635	0.107	9.923
15	2011	176,315.79	-2.074	21.526	0.119	10.010
15	2012	1,826,315.79	-4.347	21.518	0.084	10.046
15	2013	1,807,894.74	0.670	21.607	0.086	10.101
15	2014	1,734,210.53	1.063	21.568	0.090	10.121
16	2010	698,891.30	0.414	21.375	0.123	9.113

Bank #	Year	SNCI	ROA	lnTA	EQTA	lnGDP
16	2011	276,470.59	0.064	21.381	0.122	9.252
16	2012	42,394.82	0.201	21.532	0.104	9.291
16	2013	11,428.57	0.046	21.445	0.106	9.303
16	2014	25,688.07	0.066	21.456	0.099	9.333
17	2010	4,329.00	1.509	21.209	0.146	7.259
17	2011	5,243.45	1.258	21.349	0.127	7.376
17	2012	3,921.57	2.780	21.152	0.150	7.416
17	2013	1,050.42	1.864	21.079	0.137	7.454
17	2014	2,613.24	2.368	21.243	0.148	7.537
18	2010	770.04	0.160	20.452	0.139	8.047
18	2011	3,078.53	0.104	20.934	0.086	8.202
18	2012	5,007.12	0.723	21.100	0.076	8.216
18	2013	32,214.15	0.745	21.079	0.098	8.195
18	2014	13,569.08	0.032	21.215	0.084	8.158
19	2010	94,736.84	-1.558	20.832	0.282	9.923
19	2011	18,421.05	0.116	20.897	0.264	10.010
19	2012	15,789.47	0.159	20.953	0.252	10.046
19	2013	136,842.11	-3.543	21.089	0.184	10.101
19	2014	234,210.53	0.515	21.177	0.174	10.121
20	2010	0.00	0.571	20.383	0.164	8.047
20	2011	0.00	0.784	20.655	0.125	8.202
20	2012	67,755.15	0.957	20.819	0.112	8.216
20	2013	11,566.51	0.799	20.911	0.089	8.195
20	2014	84.28	0.838	21.172	0.100	8.158
21	2010	67,730.95	0.099	20.086	0.106	6.950
21	2011	55,663.66	1.035	20.339	0.090	7.115
21	2012	134,207.71	0.420	20.453	0.075	7.144
21	2013	131,595.00	0.218	20.526	0.072	7.151
21	2014	88,476.76	0.307	20.738	0.067	7.183
22	2010	246,554.76	0.044	19.964	0.152	6.950
22	2011	160,145.93	0.395	20.099	0.135	7.115
22	2012	114,785.87	0.543	20.298	0.108	7.144
22	2013	85,191.38	0.171	20.448	0.087	7.151
22	2014	126,577.65	0.591	20.734	0.073	7.183
23	2010	63,094.26	-2.588	20.385	0.101	6.950
23	2011	663,585.82	0.663	20.549	0.090	7.115
23	2012	386,734.48	-1.290	20.489	0.082	7.144
23	2013	254,826.33	-0.047	20.537	0.067	7.151
23	2014	279,515.33	0.155	20.661	0.063	7.183

Bank #	Year	SNCI	ROA	lnTA	EQTA	lnGDP
24	2010	12,634.00	0.446	19.694	0.134	7.757
24	2011	30,258.00	1.027	19.788	0.122	7.888
24	2012	20,948.00	1.377	19.863	0.137	7.931
24	2013	20,864.00	1.300	20.035	0.126	8.004
24	2014	28,671.00	1.266	20.205	0.113	7.995
25	2010	320,811.00	-0.805	19.470	0.168	7.757
25	2011	629,983.00	0.300	19.520	0.160	7.888
25	2012	214,492.00	0.160	19.743	0.152	7.931
25	2013	294,322.00	0.747	19.965	0.133	8.004
25	2014	206,719.00	0.730	20.147	0.120	7.995
26	2010	77,239.11	-4.665	19.151	0.245	6.950
26	2011	187,572.39	-1.255	19.584	0.210	7.115
26	2012	263,265.52	0.179	20.001	0.126	7.144
26	2013	333,700.68	-2.122	20.040	0.100	7.151
26	2014	110,049.46	-1.384	19.643	0.141	7.183
27	2010	0.00	3.179	17.425	0.221	8.047
27	2011	8,209.40	3.202	18.075	0.195	8.202
27	2012	0.00	1.082	18.392	0.162	8.216
27	2013	0.00	0.308	18.503	0.118	8.195
27	2014	0.00	-1.345	18.567	0.129	8.158
28	2010	0.00	2.449	18.842	0.168	9.113
28	2011	0.00	0.417	19.060	0.152	9.252
28	2012	6,979.94	0.606	19.045	0.164	9.291
28	2013	0.00	0.126	18.701	0.225	9.303
28	2014	7,431.19	-5.200	18.015	0.390	9.333

Note:

SNCI = Sharī'ah non-compliant income

ROA = Return on assets

lnTA = Return to natural logarithm of total assets

EQTA = Total equity per total assets

lnGDP = Return to natural logarithm of gross domestic product per capita

Appendix 4: Ratio Analysis of 51 Islamic Banks for 2010–2014

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
1	2014	0.00002	0.00040	0.00257
1	2013	0.00004	0.00084	0.00516
1	2012	0.00008	0.00165	0.00849
2	2014	0.00541	0.03787	0.23913
2	2013	0.00574	0.03980	0.37860
2	2012	0.00244	0.02054	0.19793
2	2011	0.00464	0.04091	0.39785
2	2010	0.00690	0.06039	1.10928
3	2014	0.00829	0.06781	0.53009
3	2013	0.00818	0.06456	0.58204
3	2012	0.00564	0.03838	0.40429
3	2011	0.00879	0.08054	0.56553
3	2010	0.00798	0.07403	0.58662
4	2014	0.00000	0.00000	0.00000
4	2013	0.00049	0.00276	0.02852
4	2012	0.00137	0.00766	0.08883
4	2011	0.00257	0.01611	0.12338
5	2012	0.00048	0.00369	0.02187
6	2014	0.00682	0.07712	0.58224
6	2013	0.05771	0.61006	4.69356
6	2012	0.01417	0.13722	1.14796
6	2011	0.02390	0.22570	1.93123
6	2010	0.04283	0.37433	3.51967
7	2014	0.00000	0.00000	0.00000
7	2013	0.00077	0.01428	0.10433
8	2014	0.00001	0.00010	0.00070
8	2013	0.00012	0.00159	0.01088
8	2012	0.00001	0.00008	0.00060
8	2011	0.00059	0.00651	0.05029
8	2010	0.00003	0.00033	0.00167
9	2014	0.00696	0.06640	0.82016
9	2013	0.00100	0.00960	0.28622
9	2012	0.05535	0.78665	25.43285
9	2011	0.00250	0.01945	-0.12693
9	2010	0.00195	0.02178	1.07493
10	2014	0.00610	0.04419	2.80213
10	2013	0.00656	0.06454	0.57463

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
10	2012	0.00902	0.08290	1.09069
10	2011	0.02402	0.34466	3.77034
10	2010	0.01469	0.19240	2.88984
11	2014	0.00462	0.06651	0.49847
11	2013	0.00321	0.04273	0.31018
11	2012	0.00709	0.09077	0.50661
11	2011	0.00017	0.00230	0.01098
12	2014	0.00033	0.00535	0.05452
12	2013	0.00000	0.00000	0.00000
12	2012	0.00000	0.00000	0.00000
13	2014	0.00000	0.00000	0.00000
13	2013	0.00000	0.00000	0.00000
13	2012	0.00000	0.00000	0.00000
13	2011	0.00000	0.00000	0.00000
13	2010	0.00000	0.00000	0.00000
14	2014	0.01635	0.22276	2.61563
15	2014	0.00015	0.00218	0.01459
15	2013	0.00050	0.00803	0.04792
16	2014	0.00000	0.00000	0.00000
16	2013	0.00033	0.00379	0.04368
17	2014	0.00256	0.03476	2.39113
17	2013	0.00035	0.00458	0.03422
17	2012	0.00086	0.01118	0.05800
17	2011	0.00130	0.03096	0.11449
17	2010	0.00171	0.02749	0.13271
18	2014	0.01068	0.06350	1.32139
18	2013	0.01182	0.05227	1.03735
18	2012	0.02478	0.11221	2.26714
18	2011	0.00075	0.00343	1.38526
18	2010	0.00092	0.00392	0.10844
19	2014	0.00275	0.04265	3.00054
19	2013	0.00207	0.03350	0.67390
19	2012	0.00524	0.09561	0.60352
19	2011	0.00000	0.00001	0.00008
19	2010	0.00000	0.00001	0.00010
20	2014	0.00106	0.01313	0.12211
20	2013	0.00051	0.00637	0.05209
20	2012	0.00026	0.00305	0.02378
21	2014	0.00755	0.13837	0.72294

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
21	2013	0.01911	0.33312	1.59231
21	2012	0.03134	0.51931	2.45182
21	2011	0.02946	0.42861	1.35643
21	2010	0.06987	0.97588	5.08364
22	2014	0.00000	0.00000	0.00000
22	2013	0.00000	0.00000	0.00000
22	2012	0.00000	0.00000	0.00000
22	2011	0.00000	0.00000	0.00000
22	2010	0.00000	0.00000	0.00000
23	2014	0.00070	0.01205	0.13479
23	2013	0.00125	0.02129	0.11789
23	2012	0.00021	0.00315	0.03220
24	2014	0.00038	0.00627	0.07279
24	2013	0.00002	0.00028	0.00328
24	2012	0.00019	0.00341	0.03016
24	2011	0.00286	0.06034	0.60304
25	2013	0.00000	0.00000	0.00000
25	2012	0.00071	0.00410	0.10306
25	2011	0.00000	0.00000	0.00000
26	2014	0.00000	0.00000	0.00000
26	2013	0.00086	0.01280	0.14562
26	2012	0.00000	0.00000	0.00000
26	2011	0.00000	0.00000	0.00000
26	2010	0.00000	0.00000	0.00000
27	2014	0.02413	0.27638	2.15868
27	2013	0.07545	0.80310	5.67612
27	2012	0.09090	0.95485	6.89640
27	2011	0.08076	0.75286	3.87825
27	2010	0.20815	1.55630	7.77786
28	2014	0.00303	0.04247	0.46213
28	2013	0.00380	0.04488	0.51374
29	2013	0.00000	0.00000	0.00000
29	2012	0.00151	0.01112	0.27750
29	2011	0.00198	0.01393	-0.38822
29	2010	0.00140	0.01042	1.61419
30	2014	0.07450	0.82435	7.01143
30	2013	0.07468	0.87038	11.14374
30	2012	0.08246	0.98380	-1.89695
30	2011	0.00790	0.06623	-0.38100

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
30	2010	0.04209	0.39342	-0.99197
31	2014	0.00123	0.01246	1.87041
31	2013	0.00056	0.00524	1.20977
31	2012	0.00189	0.01819	0.93954
31	2011	0.01433	0.11752	22.52172
31	2010	0.03642	0.29708	8.79605
32	2014	0.00016	0.00105	0.00657
32	2013	0.00007	0.00054	0.00395
32	2012	0.00026	0.00171	0.00919
32	2011	0.00028	0.00221	0.02228
32	2010	0.00027	0.00182	0.01765
33	2014	0.00083	0.00988	2.55757
33	2013	0.00226	0.02312	0.30298
33	2012	0.00034	0.00453	0.04752
33	2011	0.00025	0.00290	0.23860
33	2010	0.00010	0.00072	0.06294
34	2014	0.01488	0.08545	2.89111
34	2013	0.00949	0.05145	-0.26786
34	2012	0.00125	0.00497	0.79052
34	2011	0.00155	0.00586	1.33713
34	2010	0.00850	0.03015	-0.54525
35	2014	0.00001	0.00005	0.00064
35	2013	0.00096	0.01081	0.12003
35	2012	0.00615	0.05519	0.64303
35	2011	0.00000	0.00000	0.00000
35	2010	0.00000	0.00000	0.00000
36	2014	0.00871	0.12933	2.83608
36	2013	0.01602	0.22265	7.36583
36	2012	0.01758	0.23315	4.18504
36	2011	0.00817	0.09046	0.78970
36	2010	0.01281	0.12106	12.95378
37	2014	0.01252	0.17093	2.11755
37	2013	0.01122	0.12931	6.57623
37	2012	0.01756	0.16215	3.23465
37	2011	0.02989	0.22180	7.56325
37	2010	0.05266	0.34727	118.45920
38	2014	0.02976	0.47582	19.24594
38	2013	0.03069	0.46048	-65.36295
38	2012	0.04890	0.59982	-3.79027

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
38	2011	0.07898	0.87814	11.91882
38	2010	0.00885	0.08784	-0.34185
39	2012	0.00066	0.00872	0.02927
39	2011	0.00143	0.01768	0.14780
39	2010	0.00399	0.04852	0.02947
40	2014	0.00163	0.00312	-0.05344
40	2013	0.00049	0.00069	-0.00776
41	2014	0.00482	0.04245	0.38037
41	2013	0.00415	0.03288	0.31966
41	2012	0.00495	0.03618	0.35956
41	2011	0.00771	0.06298	0.75006
41	2010	0.00354	0.02630	0.79235
42	2013	0.00000	0.00000	0.00000
42	2012	0.00000	0.00000	0.00000
42	2011	0.00000	0.00000	0.00000
42	2010	0.00000	0.00000	0.00000
43	2014	0.03679	0.30535	5.04193
43	2013	0.06285	0.47243	8.40920
43	2012	0.05717	0.37499	35.74867
43	2011	0.20992	1.31246	69.99811
43	2010	0.11229	0.66836	-13.94830
44	2012	0.00000	0.00000	0.00000
44	2011	0.00000	0.00000	0.00000
45	2012	0.00010	0.00065	0.02847
45	2011	0.00004	0.00019	0.00562
46	2014	0.03243	0.23014	-2.34325
46	2013	0.06605	0.65778	-3.11252
46	2012	0.05420	0.43070	30.22764
46	2011	0.05858	0.27900	-4.66838
46	2010	0.03723	0.15210	-0.79800
47	2014	0.00075	0.00098	-0.01621
48	2013	0.00005	0.00033	0.00809
48	2012	0.00009	0.00048	0.01755
48	2011	0.00003	0.00010	0.00478
49	2014	0.00164	0.00383	0.07168
49	2013	0.01953	0.04526	1.08567
49	2012	0.01499	0.03251	0.76595
49	2011	0.01831	0.03469	0.76964
50	2014	0.00000	0.00000	0.00000
50	2013	0.00000	0.00000	0.00000

Bank #	Year	SNCI/TA	SNCI/TE	SNCI/NI
50	2012	0.00000	0.00000	0.00000
50	2011	0.01159	0.05940	0.36209
50	2010	0.00000	0.00000	0.00000
51	2014	0.01115	0.02857	-0.21435
51	2013	0.00000	0.00000	0.00000
51	2012	0.00374	0.02272	0.61682
51	2011	0.00000	0.00000	0.00000
51	2010	0.00000	0.00000	0.00000

Note:

SNCI = Shari'ah non-compliant income

TA = Total Asset

TE = Total Equity

NI = Net Income

Appendix 5: The Results of Pearson Correlation[136]

		SNCI	TA	TE	NI
Shari'ah Non-compliant Income	Pearson Correlation	1	.355**	.350**	.323**
	Sig. (2-tailed)		.000	.000	.000
	N	202	202	202	202
Total Asset	Pearson Correlation	0.355**	1	0.902**	0.890**
	Sig. (2-tailed)	.000		.000	.000
	N	202	202	202	202
Total Equity	Pearson Correlation	0.350**	0.902**	1	0.911**
	Sig. (2-tailed)	.000	0.000		.000
	N	202	202	202	202
Net Income	Pearson Correlation	0.323**	0.890**	0.911**	1
	Sig. (2-tailed)	0.000	.000	0.000	
	N	202	202	202	202

Note:

SNCI = *Sharī'ah* non-compliant income

TA = Total Asset

TE = Total Equity

NI = Net Income

[136] According to the rules of Pearson's correlation if,
r (correlation coefficient) = +.70 or higher Very strong positive relationship
+.40 to +.69 Strong positive relationship
+.30 to +.39 Moderate positive relationship
+.20 to +.29 Weak positive relationship
+.01 to +.19 No or negligible relationship
-.01 to -.19 No or negligible relationship
-.20 to -.29 Weak negative relationship
-.30 to -.39 Moderate negative relationship
-.40 to -.69 Strong negative relationship
-.70 or higher Very strong negative relationship

Appendix 6: Descriptive Statistics of Scenarios 1 and 2

Descriptive Statistics of Scenario 1

	Sample	Mean	Std. Deviation	Minimum	Maximum
CAR Pre Shock	202	20.10980198	12.35814614	10.6	96.3
Total impact on CAR	202	0.037056074	0.096647452	0	0.645130062
CAR After Shock	202	20.07274591	12.3487342	10.6	96.24070471
Total impact on CAR (2) – If Profit is 0	202	0.226106706	0.153075436	0.002095902	1.318635133
CAR After Shock (2)	202	19.88369527	12.36687249	10.24898747	96.24070471

Descriptive Statistics of Scenario 2

	Sample	Mean	Std Deviation	Minimum	Maximum
CAR pre-Shock	202	20.10980198	12.35814614	10.6	96.3
Total Impact on CAR	202	0.953899337	1.099065994	0	4.887734
CAR after Shock	202	19.15590264	12.33801414	7.142266	95.10155
Total impact on CAR (2) – If Profit is 0	202	1.539123154	0.860798505	0.011541	4.887734
CAR after Shock (2)	202	18.57067883	12.36205958	7.142266	95.10155

REFERENCES

AAOIFI, *Sharī'ah Standards for Islamic Financial Institutions* (Bahrain: AAOIFI, 2010).

Abdul Karim, M., M. Kabir Hassan, T. Hassan and M. Shamsher, "Capital Adequacy and Lending and Deposit Behaviors of Conventional and Islamic Banks", *Pacific-Basin Finance Journal*, Vol. 28, 2014, pp. 58–75.

Akkizidis, I. and S.K. Kumar, *Financial Risk Management for Islamic Banking and Finance* (Basingstoke, UK: Palgrave Macmillan, 2008).

Al-Bukhārī, Abdul Azīz, *Kashf al-Asrār* (Beirut: Dār al-Kutub al-Islāmiyyah, n.d).

Al-Dusūqī, Muḥammad bin Aḥmad, *Ḥashiyat al-Dusūqī*, (Beirut: Dār al-Fikr, n.d).

Al-Jazrī, Abdul Raḥmān, *Al-Fiqh 'Alā al-Madhahib al-Arba'ah* (Beirut: Dār al-Kutub al-'Ilmiyyah, 2003).

Al-Kāsānī, 'Alā' al-Dīn Abū Bakr, *Badā'i' al-Ṣanā'i' fī Tartīb al-Sharā'i'*, (Beirut: Dār al-Kutub al-'Ilmiyyah, 1986).

Al-Maḥallī, I., *Sharḥ al-Waraqāt fī Uṣūl al-Fiqh* (Riyadh: Maktabat al-'Abikān, 2001).

Al-Ramlī, Muḥammad ibn Aḥmad, *Ghāyat al-Bayān* (Beirut: Dār al-Ma'rifah, n.d).

Al-Ramlī, Shams al-Dīn, *Nihāyat al-Muḥtāj*, (Beirut: Dār al-Fikr, 1984).

Al-Shawkānī, *al-Sayl al-Jarrār al-Mutadaffiq 'Alā Ḥadā'iq al-Azhār* (Beirut: Dār Ibn Ḥazm, n.d.).

Al-Shawkānī, Muḥammad bin Ali, *Fatḥ al-Qadīr*, (Beirut: Dār Ibn Kathīr, 1414).

Al-Shirbīnī, Shams al-Dīn, *Mughnī al-Muḥtāj*, (Beirut: Dār al-Kutub al-'Ilmiyyah, 1994).

Al-Qarah Daghi, Ali Muhyiddin, *al-Muqaddimah fī al-Māl wa al-Iqtiṣād wa al-Milkiyyah wa al-'Aqd: Dirāsah Fiqhiyyah Qanūniyyah Iqtiṣādiyyah* (Beirut: Dār al-Bashā'ir, 2006).

Al-Zuḥaylī, Wahbah, *al-Fiqh al-Islāmī wa Adilatuhū* (Damascus: Dār al-Fikr, 2004).

Archer, S. and A. Haron, "Operational Risk Exposures of Islamic Banks", in S. Archer and R.A.A. Karim (eds), *Islamic Finance: The Regulatory Challenge* (Singapore: John Wiley & Sons (Asia) Pte Ltd, 2007).

Athanasoglou, P., S. Brissimis and M. Delis, "Bank-specific, Industry-specific and Macroeconomic Determinants of Bank Profitability", *Journal of International Financial Markets, Institutions, and Money*, Vol. 18, 2008, pp. 121–36.

Bank Negara Malaysia, Sharī'ah *Resolutions in Islamic Finance*, (Kuala Lumpur, 2010).

Bank Negara Malaysia, *Mushārakah* Concept Paper (Kuala Lumpur: BNM, 2013).

Bank Negara Malaysia, *Istiṣnā'* Concept Paper (Kuala Lumpur: BNM, 2014).

Barro, R.J. and R.M. McCleary, "Religion and Economic Growth across Countries", *American Sociological Review*, Vol. 68, No. 5, 2003, pp. 760–81.

BCBS, *International Convergence of Capital Measurement and Capital Standards*, www.bis.org/publ/bcbs04a.pdf, July 1988.

BCBS, *Working Paper on the Regulatory Treatment of Operational Risk*, www.bis.org/publ/bcbs_wp8.pdf, September 2001.

BCBS, *Sound Practices for the Management and Supervision of Operational Risk*, www.bis.org/publ/bcbs96.pdf, February 2003.

BCBS, *International Convergence of Capital Measurement and Capital Standards*, www.bis.org/publ/bcbs107.pdf, June 2004.

BCBS, *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, www.bis.org/publ/bcbs118.pdf, November 2005.

BCBS, *Enhancements to the Basel II Framework*, www.bis.org/publ/bcbs157.pdf, July 2009.

BCBS, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, www.bis.org/publ/bcbs189.pdf, December 2010; revised June 2011.

BCBS, *Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs195.pdf, June 2011.

BCBS, *Operational Risk: Revisions to the Simpler Approaches, Consultative Paper*, www.bis.org/publ/bcbs291.pdf, October 2014.

BCBS, *Review of the Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs292.pdf, October 2014.

BCBS, *Standardised Measurement Approach for Operational Risk*, www.bis.org/bcbs/publ/d355.pdf, Consultative Paper, March 2016.

Bessis, J., *Risk Management in Banking* (Chichester, UK: John Wiley & Sons, 2002).

de Fontnouvelle, P., V. Garrity, S. Chu and E. Rosengren, *The Potential Impact of Explicit Basel II Operational Risk Capital Charges on the Competitive Environment of Processing Banks in the United States* (Boston: Federal Reserve Bank of Boston, 2005).

Dusuki, A.W., M.M. Ali and Y.D. Sanrego, *The Application of Commodity Murābaḥah in Burṣa Sūq al-Sila' Malaysia vis-a-vis Jakarta Future Exchange Sharī'ah Indonesia: A Comparative Analysis*, ISRA Research Paper, No. 49/2013 (Kuala Lumpur: ISRA, 2013).

El Tiby, A.M, *Islamic Banking: How to Manage Risk and Improve Profitability* (Hoboken, NJ: John Wiley & Sons, 2011).

GARP, *Foundations of Banking Risk: An Overview of Banking, Banking Risks, and Risk-Based Banking Regulation* (Hoboken, NJ: John Wiley & Sons, 2009).

Girling, P., *Operational Risk Management: A Complete Guide to a Successful Operational Risk Framework* (Hoboken, NJ: John Wiley & Sons, 2013).

Grais, W. and A. Kulathunga, "Capital Structure and Risk in Islamic Financial Services", in S. Archer and R.A.A. Karim (eds), *Islamic Finance: The Regulatory Challenge* (Singapore: John Wiley & Sons, 2007).

Hadjiemmanuil, C., "Legal Risk and Fraud: Capital Charges, Control and Insurance", in C. Alexander (ed.), *Operational Risk: Regulation, Analysis and Management* (London: Prentice Hall-Financial Times, 2003).

Hasan, A. and R. Sabirzyanov, "Optimal Sharī'ah Governance Model in Islamic Finance Regulation", *International Journal of Education and Research*, Vol. 3, No. 4, 2015, pp. 243–58.

Hassan, M.K. and M.A.M. Chowdhury, "Basel II and Islamic Banking Regulation", *American Journal of Islamic Social Sciences* (AJISS), Vol. 27, Winter, 2010, pp. 74–101.

Hong Kong Monetary Authority, "Reputation Risk Management", *Supervisory Policy Manual*, Vol. 1, December 2008.

Hull, J.C., *Risk Management and Financial Institutions* (Englewood Cliffs, NJ: Pearson Prentice Hall, 2007).

Ibn 'Ābdīn, Muḥammad Amīn, *Ḥāshiyat Ibn 'Ābidīn*, (Beirut: Dār al-Fikr, 1992).

Ibn Taymiyyah, Taqi al-Dīn, *al-Fatāwā al-Kubrā* (Beirut: Dār al-Kutub al-'Ilmiyyah, 1st edition, 1987).

IFSB, IFSB-1: *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December 2005.

IFSB, IFSB-2: *Capital Adequacy Standard for IIFS*, December 2005.

IFSB, IFSB-4: *Disclosures to Promote Transparency and Market Discipline for IIFS*, December 2007.

IFSB, IFSB-10: *Guiding Principles on Sharī'ah Governance for Institutions Offering Islamic Financial Services*, 2009.

IFSB, IFSB-12: *Guiding Principles on Liquidity Risk Management for IIFS*, March 2012.

IFSB, IFSB-15: *Revised Capital Adequacy Standard for IIFS*, December 2013.

IFSB, IFSB-16: *Revised Guidance on Key Elements in the Supervisory Review Process of IIFS*, March 2014.

Iqbal, Z. and A. Mirakhor, *An Introduction to Islamic Finance: Theory and Practice* (Singapore: John Wiley & Sons (Asia) Pte Ltd, 2007).

ISRA, *Islamic Financial System: Principles and Operations* (Kuala Lumpur: Pearson, 2011).

Izhar, H., "Identifying Operational Risk Exposures in Islamic Banking", *Kyoto Bulletin of Islamic Area Studies*, Vol. 3, No. 2, 2010, pp. 17–53.

Khan, T. and A. Ahmed, *Risk Management: An Analysis of Issues in the Islamic Financial Industry*, Occasional Paper No. 5 (Jeddah: IRTI/IDB, 2001).

Kilavuka, M.I., "Managing Operational Risk Capital in Financial Institutions", *Journal of Operational Risk*, Vol. 3, Spring 2008, pp. 67–83.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny, "The Quality of Government", *Journal of Law, Economics, and Organization*, Vol. 15, No. 1, April 1999, pp. 222–79.

López Mejía, A., S. Aljabrin, R. Awad, M. Norat and I. Song, *Regulation and Supervision of Islamic Banks*, IMF Working Paper No. 14/219 (Washington, DC: International Monetary Fund, 2014).

Mili, M., J.M. Sahut and H. Trimeche, *Determinants of the Capital Adequacy Ratio of a Foreign Bank's Subsidiaries: The Role of the Interbank Market and Regulation of Multinational Banks*, IPAG Working Paper (2014), p. 366.

Muljawan, D., H.A. Dar and M.J.B. Hall, *‚A Capital Adequacy Framework for Islamic Banks: The Need to Reconcile Depositors' Risk Aversion with Managers' Risk Taking*, *Applied Financial Economics*, Vol. 14, 2004.

Pellegrina, L.D., *Capital Adequacy Ratios, Efficiency and Governance: A Comparison between Islamic and Western Banks*, Working Papers 20070402 (Università degli Studi di Milano-Bicocca, Dipartimento di Statistica, 2007).

Perotti, E., Ratnovski, L., and R. Vlahu, 2011, *Capital Regulation and Tail Risk*, IMF Working Paper No. 11/188.

PricewaterhouseCoopers (PwC), *Regulatory Brief: Operational Risk Capital*, https://www.pwc.com/us/en/financial-services/regulatory-services/publications/assets/fs-reg-brief-operational-risk-capital.pdf, November 2014.

Rosly, S.A., “Sharī‘ah Parameters Reconsidered”, *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 3, No. 2, 2010.

Sābiq, S., *Fiqh al-Sunnah* (Beirut: Dār al-Kitāb al-‘Arabī, 1997).

Sinkey, J.F. Jr, *Commercial Bank Financial Management in the Financial Services Industry*, 3rd ed. (New York: Macmillan Publishing Company, 1989).

Smolo, E. and M.K. Hassan, *Capital Adequacy Requirements for Islamic Financial Institutions* (London: Bloomsbury Press, 2010).

Stulz, R.M. and R. Williamson, “Culture, Openness, and Finance”, *Journal of Financial Economics*, Vol. 70, 2003, pp. 313–49.

Warde, I., *Islamic Finance in the Global Economy* (Edinburgh: Edinburgh University Press, 2000).

Wizārat al-Awqāf wa al-Shu’ūn al-Islāmiyyah, *al-Mawsū‘ah al-Fiqhiyyah al-Kuwaitiyyah* (Kuwait: Dār al-Salāsil, 1404-1427).

Yaacob, H. and E. Smolo, “It is Not a *Murābaḥah* Contract: It is Just an English Law of Contracts”, *Opalesque Islamic Finance Intelligence*, 31 May 2010.

ISBN 9789675687471

ISLAMIC FINANCIAL SERVICES BOARD
Level 5, Sasana Kijang, Bank Negara Malaysia
No. 2, Jalan Dato' Onn, 50480 Kuala Lumpur, Malaysia
www.ifsb.org