

## Frontiers and Mechanics of Risk Management in Islamic Banking System - Policy Measures for Effective Risk Mitigation

Abubakar Yusuf Sanyinna<sup>1</sup> & Hydzulkifli Hashim Omar<sup>1</sup>, PhD

### Abstract

The paper provides an insight for assessing risk management frameworks for implementation by the Islamic banks. Considering the dynamic nature of ever-increasing internal and external forces from which diverse banking risks are emanating, it becomes imperative to continue updating the risk management mechanisms. This is absolutely necessary in order to ensure full compliance with the relevant Shari'ah principles, strengthen depositors' protection, engender consumer confidence, minimize the impact of failure, improve quality of services, reduce costs of operation, provide greater competitive advantage, create new markets for investments, and attract more customers. Although the risk management mechanisms cannot be generalized because Islamic financial institutions are not the same in their operational activities, sizes, personnel and sophistication, but the frameworks outlined in this paper can provide useful clues for effective and comprehensive risk management and mitigation.

**Keyword:** Islamic Bank, Risk Mitigation, Supervision, Shari'ah-compliance, contract.

### 1.0 Introduction

Islamic banking is a banking activity conducted in accordance with the *Shari'ah* teaching and guided by the fundamentals of Islamic financial system (Alam and Rizvi, 2017). Conceptually, as Iqbal and Molyneux (2016) observed, Islamic banking is not a modern phenomenon in the Muslim world. It is as old as Islam itself because its products and operational principles are derived from the primary sources of the religion; the Glorious Qur'an, the Prophetic Traditions and the classical jurisprudence. These products and principles were eventually stripped of their *Shari'ah* clothing after being hijacked by the West to constitute the foundational framework and operational mechanisms of its banking system (Basov and Bhatti, 2017). Basically, the contemporary Islamic bank is established in order to get rid of *riba* from the entire banking operation which, on the other hand, its conventional counterpart is holding as a major source of its revenue generation (AAOIFI, 2010). In its general implication, *riba* signifies any increase of capital not justified by a *risk-taking* investment deal (Abdul-Rahman, 2014). Based on this foundational principle, there will be neither guarantee for the capital nor any prescribed return for the depositor in the investment activities of Islamic bank (IFSB-1, 2005).

This signifies the PLS mode of financing upon which an ideal Islamic bank is supposed to base the bulk of its operation (Abdul-Rahman, 2014). Impliedly, therefore, risk must be embraced by Islamic banking system, but must be efficiently managed (El-Tiby, 2011). Thus, as Seyed-Javadin, Raei, Safari and Iravani (2014) opined, risks must be properly assessed and efficiently managed to prevent sectoral and/or total collapse of Islamic financial institutions, but it must be borne in mind that permissible investment in Islam is only what faces risk. Thus, it is the nature of risk involved in their transactions that makes their financial operation qualitatively different from that of conventional banks (Lujuni, Wong and Yacob, 2017). Risk, according to Basov and Bhatti (2017), is the potential gaining, or losing, of a valuable thing as a result of an action, or inaction, which is foreseen, or unforeseen. Risk, therefore, can be interpreted as the intentional interaction with uncertainties that produce potential, unpredictable and uncontrollable outcomes.

<sup>1</sup> Islamic Business School, College of Business, Universiti Utara Malaysia

Islamic banking, as Oz, Ali, Khokher and Rosman (2016) clarified, like any other investment and commercial undertaking, is prone to numerous risks, some of which are peculiar to the banking system due to its ethical substance. Therefore, appropriate measures must be devised to assess and manage the risks effectively. Risk management, as Douglas (2009) views it, is all about turning risk to the advantage of a bank by using proactive value-creating policies to exploit uncertainty and risks in the most effective ways. As a process, therefore, it involves identifying, measuring, monitoring, and managing various risk exposures. While as a system, it embodies all stakeholders of the bank by specifying their respective roles in creating an effective risk management system. Risk mitigation, on the other hand, is a defensive mechanism used to protect the whole banking system from failures by using appropriate instruments and policies (Dorfman, 2007). So long as the Islamic banks believe that they taking certain risks in their operation, their risk management mechanism must be capable enough to exploit the advantage of their special risk-taking attitude (Mokhtar, Abdullah and Alhabshi, 2008). This capability entails, among other things, vibrant capital structure and sustained financial health (Oz, *et al*, 2016).

### 1.1 Objectives, Methodology and Structure of the Paper

Essentially, this study is carried out in order to achieve the following objectives:

- Exposing the philosophical foundation of modern Islamic banking system and its diverse operational mechanisms;
- Analysing the diverse nature of risk in Islamic banking operation and their potential consequences to the whole Islamic banking system globally;
- Proposing policy measures to be devised for effective and sustainable risk management in Islamic banking operation; and
- Suggesting efficient safety-nets for the Islamic banks that could strengthen their competitiveness in the global financial markets.

This study was conducted using library research method and on-the-site observation of the research area (the day-to-day operation of some Islamic banks). With this data-collection process, theoretical information was from primary and secondary sources. Relevant proofs from the works of Islamic and conventional scholars were used to buttress many key issues raised in this paper. This study also depends intensively on qualitative research papers published in renowned journals, or presented as working papers in international conferences. The paper comprises of seven sections. Section one introduces the whole study by giving an overview of the philosophical foundation of Islamic banking system, its major operational mechanism, realities and challenges posed by numerous banking risks. The remaining six sections give expositions on six key Islamic banking risks identified by the study and their proposed corresponding mitigation mechanisms respectively. The paper is finally closed with a conclusion and list of references.

### 2.0 Key Risks in the Islamic Banking System

The Islamic bank, like its conventional counterpart, is prone to various banking risks. In addition to the risks commonly faced by conventional banks, Islamic bank faces other unique risks for either compliance, or noncompliance, with the *Shari`ah* regulations (IFSB-4, 2007). The rapid growth of Islamic banking across the world coupled with its relatively higher demand for professionalism lead to greater exposure to numerous banking risks mostly associated with its unique operational instruments and contracts (GARP, 2009; Mejia, 2014). Therefore, as Izhar (2010) rightly opined, it becomes imperative to continue updating *Shari`ah*-compliant risk management and mitigation mechanisms based on the international standards that are unanimously approved by the Basel Committee, IFSB and AAOIFI. This will go a long way in protecting the integrity of Islamic banks and engendering consumer confidence in their operation. The key risks in the Islamic banking system include the following:

- Operational Risk
- Credit Risk
- Liquidity and Funding Risk
- Reputational Risk
- Money Laundering and Terrorist Financing Risks
- Market Risk.

## 2.1 Operational Risk

The Basel Committee on Banking Supervision (BCBS) (2016) defines operational risk as: *The risk of loss resulting from inadequate or failed, internal processes, people and systems or from external events.* This multidimensional definition shows that individual banks can conceive operational risk based on their respective internal settings provided that the minimum elements in the Committee's definition are included (Sharifi, Haldar and Rao, 2016). However, unlike other risks such as credit risk, market risk, and liquidity risk, operational risks are usually not willingly incurred nor are they revenue-driven (BCBS, 2014; Amin, 2017).

The increasing demand for higher degree of global corporate accountability makes genuine operational risk management an indispensable component in the banking industry (Chaudhuri and Ghosh, 2016). Moreover, wider trends such as rapid internet expansion, rise of social media, globalization, as well as miraculous scientific and technological inventions that increase the sophistication of modern banking system reinforce the necessity for state-of-the-art operational risk management (BCBS, 2014). Some common operational risks faced by commercial banks, especially in developing countries, include ATM frauds, armed robberies, identity theft, fraud, break-down of information technology (IT) systems (Akkizidis and Kumar, 2008). Other manifestations of the risks also are in form of security, privacy protection, legal risks, physical (e.g. infrastructure shutdown) or environmental risks (BCBS, 2014b; Robertson, 2016). The occurrence of these risks has implications for confidence in the Islamic banking system (Hassan and Sabirzyanov, 2015). In similar fashion, as Ibrahimovic and Franke (2017) observed, operational risks affect client satisfaction, reputation and shareholder value, all while increasing business volatility. Similarly, uncontrolled operational risks can present a major threat to an Islamic bank and, by extension, to the whole Islamic financial system (Samanta and Chakraborty, 2016). This may also aggravate other dangerous risks (IFSB-4, 2007).

### 2.1.1 Policy Measures to Mitigate Operational Risks

Operational risks can be effectively managed in such a way that losses are kept within the level of risk tolerance which is determined by balancing the cost of improvement against the expected benefits (BCBS, 2014). However, so long as workers, systems and management remain inefficient, operational risks cannot be overcome (BCBS, 2016; Kilaruka, 2008).

In order to effectively mitigate *Shari`ah*-compliance risks, the following policy measures need to be taken:

- i. Constitution of Permanent *Shari`ah* Supervisory Councils (SSCs) by Federal Governments to be directly answerable to the Governors of Central Banks. This Council may consist of various Departments based on its diverse statutory duties.
- ii. Publication of State-of-the-Art Risk Management Working Documents for strict implementation by all Islamic banks. These documents consist of the following:
  - a) *Shari`ah* Compliance Risk Management Guidelines
  - b) *Shari`ah* Review Guidelines
  - c) Risk Control Self-Assessment Guidelines
  - d) *Shari`ah* Non-compliance Management and Reporting Guidelines
- iii. Formation of Risk Management Committees (RMCs) for all Islamic Banks by the SSCs to be charged with the following responsibilities:
  - a) *Shari`ah*-compliance risk management, whereby appropriate measures are implemented in risk identification, assessment and management
  - b) Proper implementation of Risk Control Self-Assessment Guidelines
  - c) Reviewing and auditing banks' operational activities
  - d) Organizing staff training and sensitization workshops and seminars for junior and senior cadres.
- iv. Establishment of Model Islamic Banks (MIBs) by Islamic Development Bank (IDB) and Organization of Islamic Cooperation (OIC). These MIBs should be placed under strict supervision of AAOIFI and IFSB. This is in order to demonstrate the corrective operational services of Islamic banks across the world. The primary functions of MIBs include the following:
  - a) Development of risk-bearing instruments that can provide the investors with sufficient degree of liquidity, security and profitability to encourage their holdings

b) Developing innovative but competitive PLS services and products for utilizing mobilized funds effectively and efficiently

## 2.2 Credit Risk

A *credit risk* is the risk of default on a debt due to the failure of a borrower the repayment obligation (Acharya, Drechsler and Schnabl, 2014). Initially, the risk is confined to the lender when it entails the loss of capital and the expected return on it, if it is disbursed for investment. Subsequently, as Garcia (2017) observed, the risk will lead to disruption to cash flows, increased collection costs and insolvency. Credit advancement to individuals, corporate organizations or governments for direct consumption or any legally approved investment, is one of the significant transactions of the Islamic bank. It is a means of facilitating rapid economic growth, and alleviating poverty in a nation (Berger and Udell, 2011). In the modern banking system, credit exposure continues to constitute the main source of risk (Beghaghi, Massoud and Saunders, 2017). The major risks in this area that warrant attention include; default in repayment, and credit exposure to highly volatile sectors of the economy, such as commerce, and oil and gas (Berger, 2009). According to Aldoseri and Worthington (2016), the threat to the banking stability from credit risk perspective is evidenced from the following:

- Rapid growth in total assets;
- The lack of diversification in the credit portfolio of the bank; and
- The deteriorating asset quality of the bank.

### 2.2.1 Policy Measures for Mitigating Credit Risk

Generally, as Bouslama and Lahrichi (2017) clarified, credit risk in the banking sector is one of the major challenges threatening the viability of the financial system in a country. In order to mitigate the risk, therefore, the following *Shari`ah*-compliant initiatives need to be taken by Central Banks, through their *Shari`ah* Supervisory Councils (SSCs):

- (i) Establishment of Credit Risk Management Unit (CRMU) which will be responsible for improving the credit-appraisal procedures of Islamic banks. This will strengthen their credit risk management processes.
- (ii) Promoting self-discipline by the Islamic banks in the management of their risks. In this regard, the banks are being encouraged to implement the Code of Corporate Governance for the Islamic Banks, and other relevant documents produced by the International Standard-Setting Bodies, such as the Dubai-based *Hawkamah*, the Bahrain-based AAOIFI, and the Malaysia-based IFSB (BCBS, 1999, 2011; Chapra and Ahmad, 2002). These documents contain details and guidance on how to analyze and manage risks efficiently.
- (iii) Prompt issuance of subsequent revised version of all the above-mentioned documents, and any other set of guidelines on Margin Leading.
- (iv) Continued advocacy for the establishment of special *Shari`ah* Courts for speedy resolution of commercial cases. Allah, the Most Wise says:

.... And if you are disputing in anything, refer it to Allah and His Messenger, if you are really believing in Allah and the Last Day. This is the best (initiative) and wisest interpretation (*an-Nisā*: 59).

## 2.3 Liquidity and Funding Risks

*Liquidity risk* is a financial risk that arises from uncertain market or funding liquidity (Drehman and Nicholaou, 2013). A bank might lose liquidity if its credit rating falls, it experiences sudden unexpected cash outflows, or some other events cause counterparties to avoid trading with or lending to the bank (Kilaruka, 2008). *Market liquidity risk* arises in a situation where a bank cannot sell its commodities secured from direct financing deals, such as *salam* and *istiṣnā'* because other investors face funding problems (Akhtar, Ali and Sadaqat, 2011). On the other hand, *funding liquidity risk* arises when it becomes difficult to get funding from the bank because collaterals are not marketable in a given situation (Rahman and Banna, 2016). Therefore, these two liquidity risks tend to compound each other. Over a long time, liquidity challenges have been dominating the global banking experiences.

The challenge as Ramzan and Zafar (2014) observed, are mainly caused by a number of factors, among which are the following:-

- Huge non-performing loans (NPLs), particularly margin loans, and exposures to volatile economic sectors, like mining and manufacturing;
- Recall of foreign credit lines by correspondent banks;
- Withdrawal of mega portfolio investments from the banking system; and
- Absence of robust liquidity risk management framework, especially the Basel III issued in 2010 by BCBS and the Guiding Principles issued in 2012 by IFSB.

### 2.3.1 Strategies for Dealing with Liquidity Risks

As the Islamic Bank mobilizes its funds through various deposits, at least two obligations need to be fulfilled by the bank to its depositor (Abdel Megeid, 2017). These obligations are not arbitrarily made up by anybody, but are ingrained in the requirements of the noble *Shari`ah* from deposit (*wadee'ah*) and partnership contracts (*sharikaat al-'uqood*) which the bank has entered into with the depositors (al-Omar and Abdul-Haq, 1996). The obligations are as follows:

- That the bank should maintain a level of liquidity so as to be able to meet the demand for withdrawal by its depositors; and
- That the bank has to strive to generate profit for its deposits in the investment accounts, including those for short-term maturity periods of one month, three months, six months, nine months, and twelve months.

According to Abdulkarim *et al.* (2014), for the liquidity obligation to be fulfilled, therefore, it is imperative that the Islamic bank should maintain certain ratios of total depositors' funds in the reserve assets and liquid assets. Moreover, as Abdul Wahab *et al.* (2017) clarified, certain administrative measures should be taken to deal with liquidity risks, which include:

#### (i) Establishment of Permanent Chief Risk Officers (CROs) Forum

With their huge wealth of knowledge and wide experiences, members of this forum make collective deliberations on issues affecting Islamic banks (IFSB-15, 2013).

#### (ii) Regular Reshufflement of the Executive Management of Affected Banks

The reshufflement is necessary in order to, among other things,

- ensure perfect protection of depositors' funds;
- safeguard the integrity and viability of Islamic banking system; and
- engender the public confidence in Islamic banking services.

#### (iii) Adoption of Risk-based and Cross-border Supervision

Experts in both Islamic and conventional banking systems should constitute a special supervisory Committee that will undertake this vital assignment. The key objectives of the supervision include the following (IFSB-16, 2014):-

- Adoption of appropriate risk-weighting in capital adequacy calculations and the prevention of double-leveraging;
- Support for the principle that *no banking operations, wherever located, should escape supervision*;
- Ensuring that all the risks incurred by an Islamic bank, regardless of where they are booked, would be evaluated and controlled on a global basis;
- Consolidation of the financial returns, i.e consolidation of accounts of a bank using Quantitative Approach, while ensuring that the Qualitative Approach evaluates the material risks; and
- Elimination of Regulatory Arbitrage.

## 2.4 Reputational Risk

*Reputational risk*, often called *reputation risk*, is a risk of loss resulting from damages to a firm's reputation, in lost revenue; increased operating, capital or regulatory costs; or destruction of shareholder value, consequent to an adverse or potentially criminal event even if the bank is not found guilty (Trotta, Iannuzzi and Pacelli, 2016). Adverse events typically associated with reputation risk include ethics, safety, security, sustainability, quality, and innovation.

This type of risk can be informational in nature that may be difficult to realize financially (Hassani, 2016). Extreme cases may even lead to distress or bankruptcy. Recent examples of distressed banks include; Lehman Brothers, Merrill Lynch and Barings. Once the reputation of any system is damaged, repairing it could be very difficult (Verhezen, 2016). This is because significant corporate resources may be required to rectify a problem that could have been prevented by putting in place an adequate legal and regulatory framework (O'Callaghan, 2016).

#### 2.4.1 Initiatives for Mitigating Reputational Risk

It is against this background, therefore, that certain initiatives should be taken to mitigate the risk to the reputation of the Islamic banking system, including the following (Aldoseri and Worthington, 2016; Abdul Wahab *et al.*, 2017):

- The CROs Forum should expedite action towards promoting strong risk appreciation among risk managers, and encourage them to share information on areas of common interest;
- Dispatch of circulars on banks' handling of the receipt of proceeds of international money transfers;
- Constant review of the banking model to ring-fence banking operations; and
- Establishing a Financial Stability Committee (FSC) which will work towards strengthening systematic stability through formulation of monetary policy and micro-prudential rules (Fitzsimmons and Atkins, 2017)

#### 2.5 Money Laundering and Terrorist Financing Risk

According to Martin and Harvey (2011), *money laundering* (ML) is the process of transforming "dirty" money obtained from criminal activities or corrupt practices into apparently legitimate money or other assets. The process is also defined as deliberate elimination of heinous sources of money by using financial systems or services that cannot identify or track the sources or its destinations (Scott, 2006; Vittori, 2011). The methods used in laundering money are not only numerous but very complex and sophisticated. However, most money laundering methods can be divided into four classes; banking transaction, structuring (smurfing), currency exchange, and double-invoicing (Bierteker and Sue, 2008). *Terrorism financing* (TF), on the other hand, refers to any activity that provides financing or financial support to terrorists, either as individuals or organizations (Giraldo and Harold, 2007). In every country, government usually keeps a list of notorious terrorists and criminals and enacts laws that prohibit domestic financial institutions from money laundering through which such bad elements are financed. Terrorists are now moving monies through various online payment systems.

They also move large amount of monies through international ATM transactions, as well as through *Hawalah*/MSBs. Terrorists also are very tactful in using low value but high volume fraud activity to fund their operations. Moreover, as Scott (2008) observed, apart from using trade-linked schemes to launder monies, bulk cash smuggling and placement through cash-intensive businesses is another typology. Nonetheless, the older systems have not given way. Charities also continue to be used in countries where controls are not so stringent (Vittoli, 2011). In fact, ML and TF have negative effects on the economy of a nation as they are inextricably linked to the underlying criminal activities. A bank whose platform is used for any of these purposes runs the risk of being associated with the underlying crime. Evidence of complicity could have a damaging effect on the attitude of all other Islamic banks as well as their regulatory agencies and stakeholders (Lopez, Mejia, Aljabrin, Awad, Norat and Song, 2014). Therefore, it is a fundamental moral responsibility of the *Shari'ah* Supervisory Council (SSC) to devise a strong and effective Anti-Money Laundering (AML) mechanism for Islamic banks to thwart any means of Terrorist Financing.

##### 2.5.1 Measures of Controlling ML/TF Risk

In order to underscore the grave concerns mentioned earlier, the SSC should put in place appropriate measures for controlling the illegal banking activities within the Islamic banks (Hassan and Sabirzyanov, 2015). These measures include the following:

- Establishment of the Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) Office. This office will be responsible for policy formulation and ensuring compliance with the AML/CFT best practices;
- Reforming the Payment System. The purpose of the reform is to discourage cash transactions, and encourage electronic payments which could be more easily traced and documented;

- The AML/CFT Compliance Examination/Inspection. The supervision of anti-money laundering activities in the Islamic Banking system would be conducted in collaboration with other relevant authorities. Comprehensive guidelines and Know-Your-Customer (KYC) manuals should be produced by the AML/CFT Office to be used by the banks especially during their training programmes; and
- Cooperation among Stakeholders. This measure will impact positive improvement on the war on ML/FT by exchanging information, conducting joint investigations/operations, and organizing joint training programmes.

## 2.6 Market Risk

*Market* is technically defined as an aggregate of possible buyers and sellers of a certain good or service and the transactions between them (Kolb, 1993). The term "market" is also used to refer to organizations that facilitate the trade in financial securities, such as a stock exchange or commodity exchange. It can, therefore, be a physical location (like the NYSE, BSE, NSE) or an electronic system (like NASDAQ). In banking operation, *financial markets* usually take prominence. These are where people trade financial securities, commodities, and other fungible items of value at low transaction costs and at prices that reflect supply and demand. As Islamic finance is either asset-backed or equity-based, market risk becomes an important part of the Islamic banking along with credit risks (Grais and Kalathunga, 2007).

### 2.6.1 Instruments for Managing Market Risk

Basically, as a conglomerate of commercial and investment banks, the Islamic bank performs two major obligations towards its clients; representation, *tawkeel*, in the investment of deposited funds, and securitization, *ta'meen*, of the funds (Hassan and Sabirzyanov, 2015). Therefore, as Grais and Kalathunga (2007) noted, despite its unique liberal attitude towards risks, the level of risk exposure should be reduced significantly by taking the following initiatives:

- Use of Direct Financing Techniques (DFT): These are debt-creating modes of financing that involve predetermined returns on the invested capital. They consist of highly profitable business contracts like *Bai al-Mu'ajjal*, *Salam*, *Ijarah*, *Murabahah*, and *Istisna'*.
- Employment of Staff with Relevant Qualification and State-of-the-Art Experience. This is imperative in order to enable the bank conduct correct assessment of relevant sectors to be/being financed, such as science, technology, medicine, and construction.
- Strict Compliance with the *Shari'ah* Regulation. There are documents that comprehensively cover common issues and cases relating to various business bilateral contracts which comprise of both debt-creating and non-debt creating deals. They also deal with systematic capital safety nets comprising of *rahn*, *damān*, *hajr*, *taftees*, and *hawalah* (Akhtar *et al.*, 2011; IFSB-12, 2012; IFSB-15, 2013; Bouslama and Lahrichi, 2017).

## 3.0 Conclusion

This paper examines the critical nature of risks in the general banking operation and how they affect the Islamic banking system in particular. It proves how risks in the Islamic banking industry are taken with utmost seriousness, how they are systematically assessed and effectively managed. The apparent insulation of the industry from the global financial meltdown of 2008 is largely due to its unique risk-management frameworks which require further reinforcement to face future banking challenges. As the Islamic bank is more than forty years old, efforts need to be intensified professionally to further enhance its competitiveness to occupy larger portion in the global financial market. The ever-increasing complexities and operational scope of the banking sector are exposing both conventional and Islamic banks to dynamic and numerous banking risks. These risks are not only formidable but damaging to the banking sector unless properly assessed and efficiently managed by formulating adequately relevant policies and employing state-of-the-art mitigating techniques. Ultimately, the sustainable success of Islamic bank relies entirely on its ability to adequately justify to the general public its relevance to the viable modern banking business, and its usefulness to the society at large.

It must demonstrate its ability to create its own investment opportunities by conducting effective internal and external market surveys. Its transactions should be such that will give tangible form to its religious ideology. Although the theory of PLS remains a major operational framework of Islamic bank, but there is need to make it categorically clear to all and sundry that the bank also has so many low-risk but highly profitable ways of conducting its operations in accordance with the *Shari'ah* provisions.

## References

- AAOIFI (2010): *Shari'ah Standards for Islamic Financial Institutions* al-Manama: Bahrain
- Abdel Megeid, N. S. (2017). Liquidity risk management: conventional versus Islamic banking system in Egypt. *Journal of Islamic Accounting and Business Research*, 8(1).
- Abdul Karim, M., Hassan, M.K., Hassan, T. & Shamsher, M. (2014): "Capital Adequacy and Lending and Deposit Behaviors of Conventional and Islamic Banks", *Pacific-Basin Finance Journal*, Vol. 28, 58–75.
- Abdul Wahab, H., Saiti, B., Rosly, S. A., & Masih, A. M. M. (2017). Risk-Taking Behavior and Capital Adequacy in a Mixed Banking System: New Evidence from Malaysia Using Dynamic OLS and Two-Step Dynamic System GMM Estimators. *Emerging Markets Finance and Trade*, 53(1), 180-198.
- Abdul-Rahman, Y. (2014). *The Art of RF (Riba-Free) Islamic Banking and Finance: Tools and Techniques for Community-Based Banking*. John Wiley & Sons.
- Acharya, V., Drechsler, I., & Schnabl, P. (2014). A pyrrhic victory? Bank bailouts and sovereign credit risk. *The Journal of Finance*, 69(6), 2689-2739.
- Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Liquidity risk management: a comparative study between conventional and Islamic banks of Pakistan. *Interdisciplinary Journal of Research in Business*, 1(1), 35-44.
- Akkizidis, I. & Kumar, S.K. (2008): *Financial Risk Management for Islamic Banking and Finance* Basingstoke, UK: Palgrave Macmillan.
- Alam, N., & Rizvi, S. A. R. (2017). Empirical Research in Islamic Banking: Past, Present, and Future. In *Islamic Banking* (pp. 1-13). Springer International Publishing.
- Aldoseri, M., & Worthington, A. C. (2016). Risk Management in Islamic Banking: An Emerging Market Imperative. In *Risk Management in Emerging Markets: Issues, Framework, and Modeling* (pp. 229-252). Emerald Group Publishing Limited.
- Al-Omar, F. and Abdul-Haq, M.K. (1996): *Islamic Banking: Theory, Practice and Challenges*, Karachi: Oxford University Press, Pakistan.
- Amin, Z. (2016). Quantification of Operational Risk: A Scenario-Based Approach. *North American Actuarial Journal*, 20(3), 286-297.
- Basel Committee on Banking Supervision (BCBS) (1999): "Enhancing Corporate Governance for Banking Organizations, www.bis.org (Bank of International Settlements Working Paper, No. 56.
- Basov, S., & Bhatti, M. I. (2017). *Islamic Finance in the Light of Modern Economic Theory*. Springer.
- BCBS (2001): *Working Paper on the Regulatory Treatment of Operational Risk*, www.bis.org/publ/bcbs\_wp8.pdf, September.
- BCBS (2003): *Sound Practices for the Management and Supervision of Operational Risk*, www.bis.org/publ/bcbs96.pdf, February.
- BCBS (2004): *International Convergence of Capital Measurement and Capital Standards*, www.bis.org/publ/bcbs107.pdf, June.
- BCBS (2005): *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version*, www.bis.org/publ/bcbs118.pdf, November.
- BCBS (2009): *Enhancements to the Basel II Framework*, www.bis.org/publ/bcbs157.pdf, July.
- BCBS (2011): *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*, www.bis.org/publ/bcbs189.pdf, December 2010; revised June.
- BCBS (2011): *Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs195.pdf, June.
- BCBS (2014): *Operational Risk: Revisions to the Simpler Approaches, Consultative Paper*, www.bis.org/publ/bcbs291.pdf, October.
- BCBS (2014): *Review of the Principles for the Sound Management of Operational Risk*, www.bis.org/publ/bcbs292.pdf, October.
- BCBS (2016): *Standardised Measurement Approach for Operational Risk*, www.bis.org/bcbs/publ/d355.pdf, Consultative Paper.
- Berger, A.N. and Udell, G.E. (2011): "Small Business Credit Availability and Relationship Leading", *Federal Reserve Board Working Paper*, Washington D.C.
- Beyhaghi, M., Massoud, N., & Saunders, A. (2017). Why and how do banks lay off credit risk? The choice between retention, loan sales and credit default swaps. *Journal of Corporate Finance*, 42, 335-355.
- Biersteker, T. J. & Sue E. E. (2008): *Countering the Financing of Terrorism*. London: Routledge.
- Bousslama, G., & Lahrichi, Y. (2017). Uncertainty and risk management from Islamic perspective. *Research in International Business and Finance*, 39, 718-726.
- Brunnermeier, M. K., & Pedersen, L. H. (2009). Market liquidity and funding liquidity. *Review of Financial Studies*, 22(6), 2201-2238.

- Chaudhuri, A., & Ghosh, S. K. (2016). Operational Risk. In *Quantitative Modeling of Operational Risk in Finance and Banking Using Possibility Theory* (pp. 7-28). Springer International Publishing.
- Dorfman, M. (2007): *Introduction to Risk Management and Insurance*, 9<sup>th</sup> Edition, Eaglewood Cliffs, N.J.: Prentice Hall.
- Drehmann, M., & Nikolaou, K. (2013). Funding liquidity risk: definition and measurement. *Journal of Banking & Finance*, 37(7), 2173-2182.
- El Tiby, A.M (2011): *Islamic Banking: How to Manage Risk and Improve Profitability* Hoboken, NJ: John Wiley & Sons.
- Fitzsimmons, A., & Atkins, D. (2017). *Rethinking Reputational Risk: How to Manage the Risks that can Ruin Your Business, Your Reputation and You*. Kogan Page Publishers.
- García, F. J. P. (2017). Credit Risk: Measurement. In *Financial Risk Management* (pp. 201-234). Springer International Publishing.
- GARP (2009): *Foundations of Banking Risk: An Overview of Banking, Banking Risks, and Risk-Based Banking Regulation* Hoboken, NJ: John Wiley & Sons.
- Giraldo, J. K., & Harold A. T. (2007): *Terrorism Financing and State Responses: A Comparative Perspective*, Stanford, Calif: Stanford University Press.
- Girling, P. (2013): *Operational Risk Management: A Complete Guide to a Successful Operational Risk Framework* Hoboken, NJ: John Wiley & Sons.
- Grais, W. & Kulathunga, A. (2007): "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.
- Hadjiemmanuil, C. (2003): "Legal Risk and Fraud: Capital Charges, Control and Insurance", in Alexander, C. (ed.), *Operational Risk: Regulation, Analysis and Management* London: Prentice Hall-Financial Times.
- Hasan, A. & Sabirzyanov, R. (2015): "Optimal *Shari'ah* Governance Model in Islamic Finance Regulation", *International Journal of Education and Research*, Vol. 3, No. 4, 2015, pp. 243–58.
- Hassan, M.K. & Chowdhury, M.A.M. (2010): "Basel II and Islamic Banking Regulation", *American Journal of Islamic Social Sciences* (AJISS), Vol. 27, Winter, 74–101.
- Hassani, B. (2016). *Scenario Analysis in Risk Management: Theory and Practice in Finance*. Springer.
- Ibrahimovic, S. & Franke, U. (2017). A probabilistic approach to IT risk management in the Basel regulatory framework: A case study. *Journal of Financial Regulation and Compliance*, 25(2), 176-195.
- IFSB, IFSB-1 (2005): *Guiding Principles on Risk Management for Institutions (other than Insurance Institutions) offering only Islamic Financial Services (IIFS)*, December.
- IFSB, IFSB-10 (2009): *Guiding Principles on Shari'ah Governance for Institutions Offering Islamic Financial Services*.
- IFSB, IFSB-12 (2012): *Guiding Principles on Liquidity Risk Management for IIFS*, March.
- IFSB, IFSB-15 (2013): *Revised Capital Adequacy Standard for IIFS*, December.
- IFSB, IFSB-16 (2014): *Revised Guidance on Key Elements in the Supervisory Review Process of IIFS*, March.
- IFSB, IFSB-2 (2005): *Capital Adequacy Standard for IIFS*, December.
- IFSB, IFSB-4 (2007): *Disclosures to Promote Transparency and Market Discipline for IIFS*, December.
- Iqbal, M., & Molyneux, P. (2016). *Thirty years of Islamic banking: History, performance and prospects*. Springer.
- Izhar, H. (2010): "Identifying Operational Risk Exposures in Islamic Banking", *Kyoto Bulletin of Islamic Area Studies*, Vol. 3, No. 2, 17–53.
- Kilavuka, M.I. (2008): "Managing Operational Risk Capital in Financial Institutions", *Journal of Operational Risk*, Vol. 3, 67–83.
- Kolb, W.R. (1993): *Financial Institutions and Markets*. Miami: Kolb Publishing Press, Florida – USA.
- Kungwani, P. (2014): "Risk Management – An Analytical Study", *IOSR Journal of Business and Management*, 16 (3) February, 83 - 89
- Lajuni, N., Wong, W. P. M., Yacob, Y., Ting, H., & Jausin, A. (2017). Intention to Use Islamic Banking Products and Its Determinants. *International Journal of Economics and Financial Issues*, 7(1).
- López Mejía, A., Aljabrin, S., Awad, R., Norat, M. & I. Song, I. (2014): *Regulation and Supervision of Islamic Banks*, IMF Working Paper No. 14/219 Washington, DC: International Monetary Fund.
- Martin, G. & Harvey W. K. (2011): *The Sage Encyclopedia of Terrorism*. Thousand Oaks, Calif: SAGE Publications.
- Mokhtar, H. S. A., Abdullah, N., & Alhabshi, S. M. (2008). Efficiency and competition of Islamic banking in Malaysia. *Humanomics*, 24(1), 28-48.
- Morris, S., & Shin, H. S. (2016). Illiquidity component of credit risk. *International Economic Review*, 57(4), 1135-1148.
- O'Callaghan, T. (2016). *Reputation Risk and Globalisation: Exploring the Idea of a Self-Regulating Corporation*. Edward Elgar Publishing.
- Oz, E., Ali, M.M., Khokher, Z.R. & Rosman, R. (2016): *Shari'ah Non-Compliance Risk in the Banking Sector: Impact on Capital Adequacy Framework of Islamic Banks*, IFSB/ISRA WP-065/03/2016, March.

- Paligorova, T., & Santos, J. A. (2017). Monetary policy and bank risk-taking: Evidence from the corporate loan market. *Journal of Financial Intermediation*, 30, 35-49.
- Pellegrina, L.D. (2007): *Capital Adequacy Ratios, Efficiency and Governance: A Comparison between Islamic and Western Banks*, Working Paper 20070402, Università Degli Studi di Milano-Bicocca, Dipartimento di Statistica.
- Platonova, E., Asutay, M., Dixon, R., & Mohammad, S. (2016). The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking Sector. *Journal of Business Ethics*, 1-21.
- Rahman, M. L., & Banna, S. H. (2016). Liquidity Risk Management: A Comparative Study between Conventional and Islamic Banks in Bangladesh. *Journal of Business and Technology (Dhaka)*, 10(2), 18-35.
- Ramzan, M., & Zafar, M. I. (2014). Liquidity risk management in Islamic banks: a study of Islamic banks of Pakistan. *interdisciplinary journal of contemporary research in business*, 5(12), 199-215.
- Riaz, A., Awad, R., & Nadia, S. (2014). Customer satisfaction between Islamic and conventional banks: Case of Pakistan. *Social and basic sciences research review*, 1(2), 69-73.
- Robertson, D. (2016). Introduction to Operational Risk. In *Managing Operational Risk* (pp. 1-17). Palgrave Macmillan US.
- Samanta, S., & Chakraborty, T. (2016). Perceptions of Bankers and Researchers Towards Effectiveness of Basel Norms in Banking Risk Management: A Survey. *IUP Journal of Financial Risk Management*, 13(2), 36.
- Schott, P. A. (2006): *Reference Guide to Anti-Money Laundering and Combating the Financing of Terrorism*, Washington, D.C.: World Bank.
- Seyed-Javadin, S. R., Raei, R., Safari, M., & Iravani, M. J. (2014). An explanatory analysis to identify and prioritize the challenges of Islamic Banking implementation: the case of IR Iran. *International Letters of Social and Humanistic Sciences*, (35), 45-55.
- Sharifi, S., Haldar, A. & Rao, S. N. (2016). Relationship between operational risk management, size, and ownership of Indian banks. *Managerial Finance*, 42(10), 930-942.
- Trotta, A., Iannuzzi, A. P., & Pacelli, V. (2016). Reputation, Reputational Risk and Reputational Crisis in the Banking Industry: State of the Art and Concepts for Improvements. In *Managing Reputation in The Banking Industry* (pp. 3-32). Springer International Publishing.
- Verhezen, P. (2016). *The Vulnerability of Corporate Reputation: Leadership for Sustainable Long-term Value*. Springer International Publishing.
- Vittori, J. (2011): *Terrorist Financing and Resourcing*, New York, NY: Palgrave Macmillan.