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RISK MANAGEMENT PRACTICES OF SELECTED ISLAMIC BANKS IN MALAYSIA

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Abstract: This study explores the risk management practices of major Islamic banks in Malaysia with the objective of having deeper understanding of the practices and identifying ways for further improvements. Various aspects of risk management practices are assessed through survey questionnaires, particularly those relevant and specific to the case of the Islamic banks. The study finds that the Islamic banks adopt good risk management practices with few areas of improvements include the use of computerised support systems and more sophisticated approaches to measure risks and the use of Shari'ah compliance techniques to mitigate risks. By assessing their current risk management practices, the study hopes to contribute in terms of recommending strategies to strengthen the risk management practices of the Islamic banks so as to increase the overall competitiveness in the Islamic banking industry.

Keywords: risk management; Islamic banks; competitiveness

Introduction

Being involved in the intermediation process, risk management is as important to the Islamic banks as it is to the conventional banks. Banking is a risky business and several risk factors such as credit, liquidity, operational and market risks have been identified as critical to ensure that the banks position remain intact amid the intense competition in the industry. The survival and success of a financial organization depends critically on the efficiency of managing these risks (Khan and Ahmed, 2001). More importantly, good risk management is highly relevant in providing better returns to the shareholders (Akkizidis and Khandelwal, 2007; Al-Tamimi and Al-Mazrooei, 2007). In addition, prudent risk management by financial institutions is the hallmark to avoid financial distress that could lead to a full blown financial crisis. In view of this, the issue of risk management in the financial institutions is a topic of interest not only to the industry players, but also the policy makers.

A growing literature suggests that risk management is even more challenging for the Islamic banks compared to the conventional counterpart. This is largely attributed to the fact that the Islamic banks are faced with additional risks due to the specific features of the financing contracts, liquidity infrastructure, legal requirements and governance underlying the Islamic banks' operations (Cihak and Hesse, 2008). The Islamic banks have to also ensure that the risk management techniques which include risk identification and management being adopted should not be conflicting with the *Shari'ah* principles (Khan and Ahmed, 2001). Moreover, in view of the increasing pressure of globalization, effective and efficient risk management in the Islamic financial institutions is particularly important as they endeavor to cope with the challenges of cross border financial flows. Some argued that the Islamic banks performance and profitability are significantly affected due to need to allocate more resources to mitigate these risks. In particular, the greater risk mitigation requirements call for adequate capital and reserves, appropriate pricing and control of risks, strong rules and practices for governance, disclosure, accounting, and auditing rules, and suitable infrastructure that could facilitate liquidity management (Sundararajan and Errico, 2002).

This study aims to fill the gap in the literature by focusing on the risk management practices of the Islamic banks. The study focuses on the Malaysian experience since the Islamic banking industry in this country is well-established, thus allowing complete data collection and reliable analysis. The study hopes to contribute in terms of recommending strategies to strengthen the risk management practices of the Islamic banks so as to increase the overall competitiveness in the Islamic banking industry.

This study is organized as follows. The following section reviews the literature on the risk management practices in Islamic banks. Subsequently, the next section discusses the methodology undertaken by this study and nature of data collection and data sources. This is followed by the analysis of the results, and lastly, conclusions and policy implications.

BACKGROUND OF THE STUDY

Literature Review on Risk Management Practices in Islamic Banks

Risk management is very important in the banking industry, including Islamic banking in order to ensure the reliability of the operations and procedures being followed within the banks. The risks which may create some source of threat far a bank's survival and success (Al-Tamimi and Al-Mazrooei, 2007). Risks are something that cannot be avoided but can be mitigated. An effective risk management leads to more balanced trade-off between risk and reward, to realize a better position in the future (Fatemi and Fooladi, 2006). All banks are exposed to a variety of risks including credit risk, liquidity risk, foreign exchange risk, market risk and interest rate risk. An efficient risk management practices are needed, which include risk identification, risk measurement, risk mitigation, risk monitoring, risk controlling and risk reporting.

The first study with regard to risk management of Islamic banks was done by Khan and Ahmed in 2001. They studied seventeen Islamic banks across the ten different countries using questionnaire survey. Their findings provided evidence that Murabaha contract which is really uncertain and cannot be hedged by using the tools which will more likely to increase the sensitivity of the risk. The high perception of risks may be an indication of the low degree of active risk management due to the absent of risk control through internal processes and control, especially in the case of operational risk (Iqbal, 2007). Al-Tamimi and Al- Mazrooei (2007) provided a comparative study of bank's risk management of UAE National and foreign banks. This research helped them to find that the three most important types of risks facing the UAE commercial banks were foreign exchange risk, followed by credit risk and then operating risk. They found that the UAE banks were somewhat efficient in managing risk; however the variables such as risk identification, assessment and analysis proved to be more influencing in risk management process. Finally, the results indicated that there was a significant difference between the UAE National and Foreign banks in practicing risk assessment and analysis, and in risk monitoring and controlling.

Al-Tamimi (2008) studied the relationship among the readiness of implementing Basel II Accord and resources needed for its implementation in UAE banks. Results of the research revealed that the banks in UAE were aware of the benefits, impact and challenges associated in the implementation of Basel II Accord. However, the research did not confirm any positive relationship between UAE banks readiness for the implementation of Basel II and impact of the implementation. The relationship between readiness and anticipated cost of implementation was also not confirmed. No significant difference was found in the level of Basel II Accord's preparation between the UAE national and foreign banks. It was concluded that there was a significant difference in the level of the UAE banks Basel II based on employees education level. The results supported the importance of education level needed for the implementation of Basel II Accord.

Mohd. Ariffin et. al. (2009) found that credit risk in Islamic banks perceived to be the most important risk and there is lack of advanced risk measurement techniques used in Islamic banks due to the fact that Islamic banks are still new and do not have sufficient resources and systems to use more technically advanced techniques, for example value at risk and stress testing.

The study of the Hassan (2009) shows the level of the risk management adopted by the Islamic banking in the in Brunei Darussalam. The variety of the products is differing from the conventional bank the Islamic bank so the exposure of the risk varies from conventional product and the Islamic product. Management of the Islamic banking are very much efficient of practicing the risk management technique. The major dilemma regarding risk is foreign exchange risk, credit risk and operational risk. Risk identification and risk assessment and analysis were the most impelling variables of the today's Islamic system in Brunei. Standard of Basel –II Accord are not truly implemented by the Islamic banking of the Brunei Darussalam banking sector, resultantly shakes of the efficient risk management practices.

Another study is by Shafiq and Nasr (2010) which explore the current risk management practices that are adopted by the Pakistani commercial banks. The study of data was collected from both of sources primary and secondary. The deduction of the study was the significant difference between the public sector and private banks. It further suggested that financial soundness indicator differ in value for each type of commercial bank. It is no doubt that there is good understanding of risk management among the employee of banks, but there is a gap of training courses which needs to be tackle for risk management. Khalid and Amjad (2012) conducted a research on the risk management in Islamic banking in Pakistan. The author use the same model suggested by Al-Tamimi and Al-Mazrooei (2007) of risk management practices. The data was collected from the primary sources with the questionnaire distributed in Islamic banks of Pakistan of 135 inclusive with very high response rate. The regression has been run to evaluate the result and finding suggests that Islamic banking system in Pakistan have a positive and significant effect on risk management practices. The most influencing and significant variable of the study was credit risk analysis, risk monitoring and understanding risk and risk management.

Hussain and Al-Ajmi (2012) conducted a comparative analysis on risk management practices between the Islamic and conventional banking system in Bahrain. The data has been collected from the questionnaire to generalize the finding of comparative analysis. The new modified dummy variable bank type has been used to make the optimum comparison. The finding of the study was to understand risk and risk management, risk identification, risk monitoring, risk assessment and analysis and credit risk analysis that have a positive and significant effect on risk management practices in Islamic and conventional banking of Bahrain. The comparative analysis of the study was that there is only the understanding risk and risk management got the significant difference between the Islamic and conventional banking of Bahrain. The other entire variables were not significantly different in Bahrain Islamic and conventional banking system.

The above literature of all the past studies figured out the risk management practices adopted by the financial institutions from all over the world in different types of banks. There are different types of risk faced by different types of the bank. The next section discusses the risk management practices as suggested by the regulators.

Risk Management Practices by Regulators

With reference to Basel Committee on Banking Supervision (1999 and 2001b) and Bank Negara Malaysia (2001) on specific risk management practices, there are three (3) important components are used in risk management systems. These include (1) appropriate overview by the Board of Directors (BODs) and management; (2) risk management process; and (3) internal control. According to Bank Negara Malaysia (2001), it is a duty of the BODs to be aware and ensure the proper oversight of risk management. Management on the other hand are responsible to implement policies approved by the BODs and to develop policies and procedures to identify, measure, monitor and control risk. The internal audit function should provide an ongoing focus on the internal control systems and periodic reviews of the credit risk management processes. It should also review compliance with approved policies, as well as applicable laws and regulations.

IFSB (2005), provide general requirement of risk management to have comprehensive risk management and reporting process. This includes appropriate board and senior management oversight, to identify, measure, monitors, report and control relevant categories of risks and to hold adequate capital against these risks. The process shall take into account appropriate steps to comply with *Shari'ah* rules and principles and to ensure the adequacy of relevant risk reporting to the supervisory authority. Also, the IFSB (2005) on the general requirement on risk management includes appropriate board and senior management oversight, to identify, measure, monitors, report and control relevant categories of risks.

METHODOLOGY AND DATA

Survey questionnaires were designed and distributed in efforts to have an in-depth understanding of the existing risk management practices in the Islamic banks in Malaysia. As such, primary data are obtained through a questionnaire survey were aimed at getting the respondents' perceptions towards the risk management practices of the Islamic bank. In the context of this study, the survey approach using the questionnaire is considered as the most appropriate technique in collecting the primary data. The use of questionnaire survey is highly suitable as banks normally disclose minimal details on their risk management strategies in their annual reports (Tufano, 1996). It also allows quantitative analysis to be conducted in the testing of inferences and to generalize the findings (Neuman and Kreuger, 2003).

Additionally, since the questions were designed to test the understanding of the risk management concepts and applications, the survey questionnaires were distributed to risk managers in eight Islamic banks in Malaysia to assess the risk management practices in these selected banks[1]. Thus, only one response for each bank is expected. Of the total eight banks selected, five banks responded to the questionnaires, representing a response rate of about 63%.

The questionnaire consists of three sections. The first section was designed to gather the bankers' perception towards the risk management practices in their institutions. The second section was designed to gather information about the practices of risk reporting, measurement and mitigation techniques adopted by the Islamic banks.

Following Khan and Ahmed (2001) and Mohd Ariffin et. al. (2009), the questionnaires are designed such that the Islamic banks would respond by giving a score to their practices. Each Islamic bank is given a score for its risk management practices, which is then compared with the mean score for each category of the practice. These practices are being categorized into three types, namely risk reporting, risk measurement and risk mitigation techniques. To measure the risk management practices, five important components in reference to Basel Committee on Banking Supervision (1999 and 2001b) and Bank Negara Malaysia (2001) are used. These are Risk Management Environment, Policies and Procedures, Risk Measurement, Risk Mitigation, Risk Monitoring and Internal Control.

A novel contribution of this study is that it further designed specific aspects of the five measures of risk management practices. The detail survey items being developed are listed in the tables in the next section.

FINDINGS

Risk Management Practices

The study uses a 5-Likert scale approach in the questionnaire. The higher the scale indicates that the respondent strongly agrees to such practices adopted by their banks. As mentioned, Risk Management Practices covered in five areas: (i) Risk Management Environment, Policies and Procedures; (ii) Risk Measurement Practices; (iii) Risk Mitigation Practices; (iv) Risk Monitoring Practices; and (v) Internal Control Practices, as suggested by the Basel Committee on Banking Supervision (1999 and 2001b) and Bank Negara Malaysia (2001). Specific items assessing each area of risk management practices are further refined based on Mohd Ariffin et al. (2009).

Table 1 shows the results on "Risk Management Environment, Policies and Procedures" of the selected Islamic banks. Based on the responses on 12 detailed aspects of this area of risk management practices, the study finds that there is a clear communication on the overall objectives

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[1] At the time of data collection, there were eight major Islamic banks to be considered, namely Affin Islamic Bank (AFFIN), Asian Finance Bank Berhad (AFBB), Bank Islam M'sia Berhad (BIMB), Bank Muamalat M'sia Berhad (BMMB), CIMB Islamic Bank (CIMB), EONCAP Islamic Bank (EONCAP), Hong Leong Islamic Bank (HLBB), and RHB Islamic Bank (RHB).

of the risk management to the bankers. Specifically, item 3: *Overall objectives are communicated* has the highest mean of 4.0 and zero standard deviation, indicating the bankers are unanimous on the importance of transparency in effective risk management practices. Furthermore, majority of the respondents (80%) strongly agreed with three items, namely item 4*: Board of directors approves the overall policies;* item 9*: The bank adopted and utilized guidelines;* and item 5*: Board of directors ensures that management takes necessary actions*, indicating again, a strong agreement amongst the respondents on the importance of the board of directors in Islamic banks as part of the corporate governance structure.

Table 1. Risk Management Environment, Policies and Procedures

Item	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. A formal risk management system is in place	-	-	-	60.0	40.0	4.4	0.548
2. Board of directors outlines the overall objectives	-	-	20.0	60.0	20.0	4.0	0.707
3. Overall objectives are communicated	-	-	-	100.0	-	4.0	0.000
4. Board of directors approves the overall policies	-	-	-	20.0	80.0	4.8	0.447
5. Board of directors ensures that management takes necessary actions	-	-	-	20.0	80.0	4.2	0.447
6. A committee responsible is in place	-	-	-	40.0	60.0	4.6	0.548
7. Internal guidelines are in place	-	-	20.0	80.0	-	3.8	0.447
8. Clear policy promoting asset quality	-	-	-	60.0	40.0	4.4	0.548
9. The bank adopted and utilized guidelines	-	-	-	20.0	80.0	4.8	0.447
10. Mark up on rates on financing are set	-	-	20.0	80.0	-	3.8	0.447
11. The bank has the policy of investment across different countries	-	-	60.0	20.0	20.0	3.6	0.894
12. The bank has the policy of diversifying investment across different sectors	-	-	-	60.0	40.0	4.4	0.548

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree.

Essentially, the results convey that active participation of the board of directors in the risk management practices ensures consistency in achieving the objectives of the banks among the stakeholders.

Based on the responses, there is a clear concern among the bankers that there is no clear indication if the Islamic banks abide to a particular guideline in investing across different countries. As shown in Table 1, item 11: *The bank has the policy of investment across different countries*, has the lowest mean. This could be attributed to the nature of operations of most of the Islamic banks being selected in this study, which are very much relying on the domestic market. It is also important to note that the bankers are not in agreement if internal guidelines on risk management procedures and policies are in place, as being shown by the low mean on item 7

Moving on to the second component of the risk measurement practices, namely risk measurement, four aspects of this component are being specified. As shown in Table 2, 80% of the respondents strongly agreed that the bank regularly assesses the positions of profit and loss (item 3), with high mean of 4.8 and standard deviation of 0.447. This would assist the bank in managing the risks efficiently. The bankers are also on agreement that *the bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity*; and that *the bank has a quantitative support system for assessing customers' credit standing.*

However, the result shows that the lowest mean is for item 1: *A computerized support system for estimating the variability of earnings and risk management is in place* (a mean of 3.4 and a high standard deviation of 0.894), indicating that there is still insufficient computerized support system for risk management in the Islamic banks.

Table 2. Risk Measurement

Items	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. A computerized support system for estimating the variability of earnings and risk management is in place	-	-	80.0	-	20.0	3.4	0.894
2. The bank regularly conducts simulation analysis and measure benchmark (interest) rate risk sensitivity	-	-	20.0	40.0	40.0	4.2	0.837
3. The bank regularly assessed the positions of profit and loss	-	-	-	20.0	80.0	4.8	0.447
4. The bank has a quantitative support system for assessing customers' credit standing	-	-	-	60.0	40.0	4.4	0.548

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree.

Table 3 presents the perception on risk mitigation practices in the Islamic banks. Four items are being developed to assess the risk mitigation by the Islamic banks. Of the four items, item 1: *There are credit limits for individual counterparty* scores highly with 80% of the respondents chose strongly agreed and the rest agreed with the statement. Interestingly, the respondents are unanimous that their banks implement the Profit Equalization Reserves as indicated by the responses on item 4: *The bank has a reserve that can be used to increase the profit share (rate and return) of depositors and investment accountholders in low performing period.* In particular, 40% of the respondents stated that they agree on the statement and 60% stated that they strongly agreed on the statement.

However, the respondents are rather divided on item 2: *The bank regularly reappraises collateral (assets)* as reflected by the low mean and high standard deviation of the responses on the item. The findings suggest that the Islamic banks need to improve on this aspect to further improve on their risk mitigation practices.

Table 3. Risk Mitigation

Items	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. There are credit limits for individual counterparty	-	-	-	20.0	80.0	4.8	0.447
2. The bank regularly reappraises collateral (assets)	-	-	20.0	60.0	20.0	4.0	0.707
3. The bank regularly confirms a guarantor's intention to guarantee their financing with a signed document	-	-	-	60.0	40.0	4.4	0.548
4. The bank has a reserve that can be used to increase the profit share (rate and return) of depositors and investment accountholders in low performing period	-	-	-	40.0	60.0	4.6	0.548

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree.

For the risk monitoring, five specific items are being developed to assess this particular aspect of risk management practice (Table 4). Of the five items, item 2: *The bank regularly (e.g. weekly) compiles a maturity ladder chart according to settlement date and monitor cash position gap* has the highest mean and lowest standard deviation, reflecting that the respondents are in general agreeable that the Islamic banks have a good monitoring system for the liquidity risks. All other specific items of risk monitoring also ranked favorably, with the respondents are in general state their agreement that the Islamic banks do practice specific measures to monitor risks.

Table 4. Risk Monitoring

Items	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. The credit limits for individual counterparty is strongly monitored	-	-	-	60.0	40.0	4.4	0.548
2. The bank regularly (e.g. weekly) compiles a maturity ladder chart according to settlement date and monitor cash position gap	-	-	-	20.0	80.0	4.8	0.447
3. The bank has in place a regular reporting system regarding risk management for senior officers and management	-	-	-	60.0	40.0	4.4	0.548
4. The bank regularly reviews country ratings if their financing or investments are international	-	-	-	60.0	40.0	4.4	0.548
4. The bank regularly monitors the customer's business performance after the extension of their financing.	-	-	-	40.0	60.0	4.6	0.548
5. The credit limits for individual counterparty are set and monitored strictly	-	-	-	40.0	60.0	4.6	0.548

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree.

Another significant component of banks' risk management practice is internal control. As shown in Table 5, the bankers are in general agreeable that the Islamic banks have proper internal control of their banking operations. The respondents are in general agreed to the statement that "*The bank has put in place an internal control system capable of swiftly dealing with newly recognized risks arising from changes in environment*", reflecting proper internal control are being implemented by the Islamic banks. Also, item 5: *The bank has backups of software and data files* scored highly with 60% of the respondents chose "strongly agree". The respondents are rather divided on two items of the internal control, namely item 2: *There is a separation of duties between those who generate risks and those who manage and control risks* and item 4: *The internal auditor is responsible to review and verify the risk management systems, guidelines and risk reports*. These aspects of internal control need to be strengthened to further improve the risk management practices of the Islamic banks.

Table 5. Internal Control

Items	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. The bank has put in place an internal control system capable of swiftly dealing with newly recognized risks arising from changes in environment	-	-	-	100.0	-	4.0	0.000
2. There is a separation of duties between those who generate risks and those who manage and control risks	-	-	20.0	20.0	60.0	4.4	0.894
3. The bank has countermeasures (contingency plan) against disaster and accidents	-	-	-	60.0	40.0	4.4	0.548
4. The internal auditor is responsible to review and verify the risk management systems, guidelines and risk reports	-	-	40.0	20.0	40.0	4.0	1.000
5. The bank has backups of software and data files	-	-	-	40.0	60.0	4.6	0.548

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree.

Risk Reporting Practices

The next part of the questionnaire aims to examine the risk reports prepared by the Islamic banks, risk measurement and risk mitigation techniques used by Islamic banks.

As shown in Table 6, all Islamic banks in the study produce reports on credit risk, market risk, rate of return risk, liquidity risk and operational risk. This shows that all the important risks reports have been prepared by Islamic banks to enhance transparency in risk reporting. The results are consistent with Mohd Ariffin (2009), who suggests that risk reporting and disclosure in Islamic banks was perceived to be more important in Islamic banks than conventional banks due the existence of profit-sharing IAH in Islamic banks; and as IFSB (2005) in their guiding principles of risk management, emphasize on reporting on each specific risk and also to ensure the adequacy of relevant risk reporting to supervisory authorities. The commodities and equity position risk report and Shari'ah non-compliance risk report are the two reports that are not reported by Islamic banks as perceived by the bankers. This indicates that Islamic banks are still lacking with regard to disclosure of Shari'ah non-compliance risk as well as the commodities and equity risk. The reason may be due that the Islamic banks do not really concentrate on equity based financing as compared to debt based financing.

Table 6. Type of Risk Reports by Islamic Banks

	YES (%)	NO (%)
Capital at risk report	80	20
Credit risk report	100	-
Market risk report	100	-
Rate of return risk report	100	-
Liquidity risk report	100	-
Foreign exchange risk report	80	20
Commodities & equities position risk report	60	40
Operational risk report	100	-
Shari'ah non-compliance risk report	60	40
Country risk report	80	20

Risk Measurements

For risk measurement, all the Islamic banks in the study currently use all the less technically advanced risk measurement approaches (credit ratings, gap analysis, duration analysis, maturity matching analysis and earnings at risk). For the more technically advanced risk measurement approaches (Value at risk, simulation techniques, estimates of worst case scenarios/stress testing, RAROC and the internal-based rating system), the average is only 68%, meaning that majority of Islamic banks still not use the "more technically advanced risk measurement approaches" except for stress testing and simulation technique. Table 8 shows the risk measurement approaches used by Islamic banks. As argued by Mohd Ariffin et al. (2009), Islamic banks are still new and do not have sufficient resources and systems to use more technically advanced techniques.

Table 7. Risk Measurement Approaches Used by Islamic Banks

	YES (%)	NO (%)
Credit ratings	100	-
Gap analysis	100	-
Duration analysis	100	-
Maturity matching analysis	100	-
Earnings at risk	100	-
Value at risk	60	40
Simulation technique	100	-
Estimates of worst case scenarios/ stress testing	100	-
Risk adjusted rate of return on capital (RAROC)	20	80
Internal based rating system	60	40
Less technically advanced risk measurement approaches[2] *(Average)*	100	-
More technically advanced risk measurement approaches[3] *(Average)*	68	32

Risk Mitigation Techniques

Table 8 shows the risk mitigation techniques used by Islamic banks. It is found that only minority of Islamic banks use the "*Shari'ah*-compliant risk mitigation technique" except the use of *Hamish Jiddiyah and Urboun* for their risk mitigation technique. The reasons of the lack usage of *Shari'ah*-compliant risk mitigation technique may be due to those technique are subject to different interpretation by *Shari'ah* scholar. Other reasons may include that as indicated by Mohd Ariffin et al. (2009) that *Salam* and *Istisna'* contracts are not widely used in Islamic banks.

Table 8. Risk Mitigation Technique used by Islamic Banks

	YES (%)	NO (%)
On-balance sheet netting	60	40
Third-party enhancement	40	60
Loan loss reserve	100	-
Guarantees	100	-
Collateral arrangement	100	-
Islamic option	20	80
Islamic swaps	60	40
Islamic currency forwards	60	40
Parallel Salam contracts	-	100
Parallel Istisna' contracts	20	80
Hamish Jiddiyah (Security deposit)	80	20
Urboun (Earnest money)	80	20
Used by conventional institution[4] *(average)*	*80*	*20*
Shari'ah risk mitigation technique [5] *(average)*	*66*	*34*

[2] Credit ratings, gap analysis, duration analysis, maturity matching analysis and earnings at risk are in the category of less technically advanced risk measurement approaches.

[3] Value at risk, simulation techniques, estimates of worst case scenarios/stress testing, RAROC and the internal-based rating system are in the category of more technically advanced risk measurement approaches.

[4] On-balance sheet netting, third-party enhancement, loan loss reserve, guarantees and collateral arrangement are under the category of risk mitigation technique that used by conventional financial institutions.

[5] Islamic option, Islamic swaps, Islamic currency forwards, Parallel *Salam* contracts, Parallel *Istisna'* contracts, *Hamish Jiddiyah* and *Urboun* are under the category of *Shari'ah*-compliant risk mitigation technique.

Conclusions and Recommendations

This study used primary data and secondary data to examine the risk management practices in selected Islamic banks and the financial performance of these Islamic banks. With regard to assessing the risk management practices in the selected Islamic banks, all the banks in the study practice good risk management with few areas of improvements include the use of computerized support systems and more sophisticated approaches to measure risks and the use of Shari'ah compliance techniques to mitigate risks.

Overall, the findings on risk management practices show the importance of board of directors to approve the overall policies and to ensure that management takes necessary actions to manage the risks. In addition, the findings also show that overall objectives are communicated throughout the bank. This indicates the governance structure must be in place to cater this needs. Under risk measurement practices, 80% of the respondents strongly agree that the bank regularly assesses the positions of profit and loss. In order to mitigate the risks, there are credit limits for individual counterparty item has the highest mean. The Islamic banks also have good risk monitoring system with regard to compilation of maturity ladder chart according to settlement date and monitor cash position gap. Moving to internal control, the Islamic bankers in the study perceived that the bank has backups of software and data files.

With regard to risk management practices, Islamic banks are found to have better risk monitoring practices followed by risk mitigation practices and internal control as compared to risk measurement policies and risk environment policies and procedures. Meanwhile, with regard to the type of reports, the reports on credit risk, market risk, rate of return risk, liquidity risk and operational risk have been produced by the Islamic banks in the study.

Moving to the type of reports produced by Islamic banks, all the Islamic banks in the study have reports on credit risk, market risk, rate of return risk, liquidity risk and operational risk. This indicates the Islamic banks agreed that in order to be transparent, all the risk reports must be produced. This can lead to improve accountability and better governance in Islamic banks.

The findings show that Islamic banks are perceived to use less technically advanced risk measurement techniques of which the most commonly used are credit ratings, gap analysis, duration analysis, maturity matching, and earnings at risk. The more technically advanced risk measurement techniques which include value at risk, simulation techniques, and estimates of worst case scenarios/stress testing, RAROC and internal-based rating system) are perceived not to be used widely by Islamic banks in the study. The main explanation is that Islamic banks are still new and do not have sufficient resources and systems in place to employ more technical advanced techniques.

In addition, the results show that Islamic banks are not fully using the *Shari'a* compliant risk mitigation methods which are different from the ones used by conventional banks. The reason is because these methods are still subject to several objections by *fiqh* scholars, which according to them, (for example parallel *Bai' Salam)* may lead to speculation (Usmani, 1996).

In conclusion, even though, on average the Islamic banks in the study have better risk management practices, there is still enough room for Islamic banks to improve their risk management system. The introduction of an effective risk management culture in Islamic banks will ensure their competitiveness and survival in a world full of uncertainties and crises. On the other hand, the development of new products requires Islamic banks to adopt more technically advanced risk measurement techniques and also Shari'ah compliant risk mitigation technique in order to sustain their competitiveness in the market.

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