International Review of Business Research Papers
Vol.5 No. 1 January 2009 Pp. 242-254

Risk Management Practices and Risk Management Processes of Islamic Banks: A Proposed Framework

Romzie Rosman

This paper proposes a research framework on risk management practices and the aspects of risk management processes. The four important aspects of risk management processes are: (1) understanding risk and risk management; (2) risk identification; (3) risk analysis and assessment; and (4) risk monitoring. Conceptual and empirical literatures are explained to suggest the conceptual model. The framework suggests that there is a positive relationship between the aspects of risk management processes and risk management practices. Then, the discussions are used to generate research hypotheses to suggest the relationships. Hence, further research can prove empirically the relationships and provide contribution in the area of Islamic banking.

Field of Research: Islamic Banking

1. Introduction

A comprehensive framework of risk management is applicable equally to a conventional and an Islamic bank (Iqbal and Mirakhor, 2007). The process of risk management is a two (2) step process. The first is to identify the source of the risk, i.e. to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument. Once a general framework of risk identification and management is developed, the techniques can be applied to different situations, products, instruments and institutions.

Romzie Rosman, Faculty of Business Administration, Tun Abdul Razak University, Malaysia, email: romzie@unitar.edu.my or romzierosman@gmail.com

It is crucial for Islamic banks (IBs) to have comprehensive risk management framework as there is growing realization among IBs that sustainable growth critically depends on the development of a comprehensive risk management framework (Greuning and Iqbal, 2007).

A robust risk management framework can help IBs to reduce their exposure to risks, and enhance their ability to compete in the market (Iqbal and Mirakhor, 2007). A reduction in each institution's exposure will reduce the systemic risk as well. Hence, it is necessary that IBs have in place a comprehensive risk management and reporting process to identify, measure, monitor, manage, report and control different categories of risks. In addition, this process should pay attention to compliance with Shari'ah rules and principles.

The objectives of this paper are to suggest conceptual framework and relationships between risk management practices; and (1) understanding risk and risk management; (2) risk identification, (3) risk analysis and assessment; and (4) risk monitoring. There are four (4) important questions in this respect are as follows:

1. What is the relationship between risk management practices; and understanding risk and risk management?
2. What is the relationship between risk management practices and risk identification?
3. What is the relationship between risk management practices; and risk analysis and assessment?
4. What is the relationship between risk management practices and risk monitoring?

2. Literature Review

Risk management framework is important for banks. In conjunction with the underlying frameworks, basic risk management process that is generally accepted is the practice of identifying, analysing, measuring, and defining the desired risk level through risk control and risk transfer. BCBS (2001) defines financial risk management as a sequence of four (4) processes: (1) the identification of events into one or more broad categories of market, credit, operational and other risks into specific sub-categories; (2) the assessment of risks using data and risk model; (3) the monitoring and reporting of the risk assessments on a timely basis; and (4) the control of these risks by senior management. BCBS (2006), on risk management processes, require supervisors to be satisfied that the banks and their banking groups have in place a comprehensive risk management process. This would include the Board and senior management to identify, evaluate, monitor and control or mitigate all material risks and to assess their overall capital adequacy in relation to their risk profile. In addition, as suggested by Al-Tamimi (2002), in managing risk, commercial banks can follow comprehensive risk management process which includes eight (8) steps: exposure identification; data gathering and risk quantification; management objectives; product and control guidelines; risk management evaluation; strategy development; implementation; and performance evaluation (e.g. Baldoni, 1998; Harrington and Niehaus, 1999).

A comprehensive explanation of risk management in Islamic banking are made by Akkizidis and Khandelwal (2008) covering the aspect of risk management issues in Islamic financial contracts, Basel II and Islamic Financial Services Board (IFSB) for Islamic financial risk, and examining the credit, market and operational risk management for IBs. They also explain the unique mixes or risk for each financial contracts in IBs. Moreover, Iqbal and Mirarkhor (2007) explain that the context of risk management in IBs covering the aspect of the needs for risk measurement, management and controls in IBs and highlight the comprehensive risk management framework for each unique risk with the references of IFSB standards. Greuning and Iqbal (2007) discuss the three major modification of theoretical balance sheet of an Islamic bank that has implications on the overall riskiness of the banking environment. Apart from that, the contractual role of various stakeholders in relation to risk is also been highlighted.

According to IFSB, the primary aim of releasing its risk management standard stems from the recognition that although “certain issues are of equal concern to all financial institutions” (IFSB, 2005) some risks are localized to IBs and as such, these principles “serve to complement the BCBS guidelines in order to cater the specificities of IBs” (IFSB, 2005). In addressing the various forms of risk that IBs are exposed to, the guiding principles set forth the methodologies required in order to balance concerns between both the internationally agreed standards of the BCBS and Shari’ah compliance issues that are fundamental to the operation of these specialized institutions. The IFSB (2005) guiding principles of risk management as basis for risk management process as in Table 1.

Table 1: The IFSB guidelines on risk management

Risk	Principle	Guideline
General requirement	Principle 1.0	IIFS shall have in place a comprehensive risk management and reporting process.
Credit risk	Principle 2.1	IIFS shall have in place a strategy for financing, recognizing the potential credit exposures at various stages of the agreement.
	Principle 2.2	IIFS shall carry out due diligence review.
	Principle 2.3	IIFS shall have in place an appropriate methodology for measuring and reporting the credit risk exposures.
	Principle 2.4	IIFS shall have in place Shariah-compliant credit risk mitigating techniques.
Equity investment risk	Principle 3.1	IIFS shall have in place appropriate strategies, risk management, and reporting processes in respect to the risk characteristics of equity instruments.
	Principle 3.2	IIFS shall ensure that their valuation methodologies are appropriate and consistent.
	Principle 3.3	IIFS shall define and establish the exit strategies in respect of their equity investment activities.
Market risk	Principle 4.1	IIFS shall have in place appropriate framework for market risk management.
Liquidity risk	Principle 5.1	IIFS shall have in place a liquidity management framework.
	Principle 5.2	IIFS shall assume liquidity risk commensurate with their ability to have sufficient recourse to Shariah-compliant funds.
Rate of return risk	Principle 6.1	IIFS shall establish a comprehensive risk management and reporting process to assess the potential impact of market factors affecting rate of return on assets.
	Principle 6.2	IIFS shall have in place an appropriate framework for managing displaced commercial risk.
Operational risk	Principle 7.1	IIFS shall have in place adequate systems and controls.
	Principle 7.2	IIFS shall have in place appropriate mechanisms to safeguard the interests of all fund providers.

[Note: IIFS – Institutions (other than Insurance Institutions) offering only Islamic Financial Service]

Source: IFSB (2005)

In general, according to IFSB (2005), IBs shall have in place a comprehensive risk management and reporting process, including appropriate board and senior management oversight, to identify, measure, monitor, report and control relevant categories of risks and, where appropriate, 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.

3. Conceptual Model

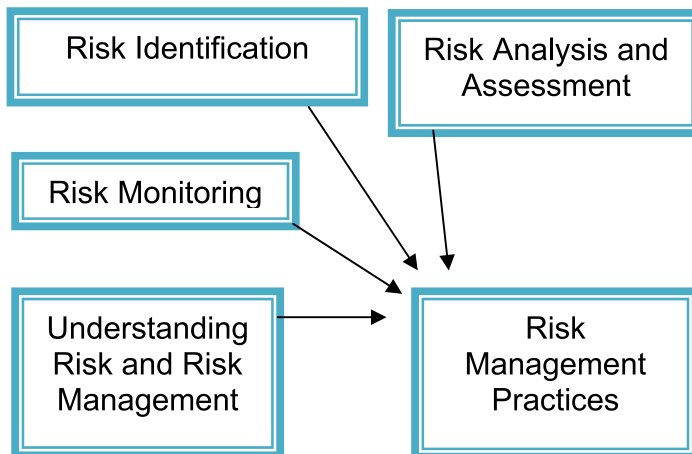
This paper examines the relationship between risk management practices and the four aspects of risk management process i.e. (1) understanding risk and risk management; (2) risk identification; (3) risk analysis and assessment; and (4) risk monitoring as in Figure 2. By making reference to the model adopted by Al-Tamimi and Al-Mazrooei (2007), the function of risk management practices is as follows:

$$RMP = f(URM, RI, RAA, RM)$$

where:

RMP = risk management practices;
URM = understanding risk and risk management;
RI = risk identification
RAA = risk analysis and assessment
RM = risk monitoring

Figure 2: Conceptual Framework



The conceptual framework suggests there is a positive relationship between risk management practices and the aspect of risk management process.

Secondly, it suggests the category of risk management processes that influence most of the practice of risk management to be examined. Regression analysis can be used to assess the factors that influence risk management practices as follows:

$$RMP = \alpha + \beta 1\ URM + \beta 2\ RI + \beta 3\ RAA + \beta 4\ RM + e$$

By analysing the model, the aspect on risk management process that influence risk management practices of IBs can be determined.

There are many conceptual studies that shows the important aspects of risk management process that firms need to have in order to practice risk management (e.g. Tchankova 2002; Kromschroder and Luck, 1998; Luck 1998; Fuser et al, 1999; Barton et al, 2002). Some empirical findings (e.g. Al-Tamimi and Al-Mazrooei, 2007) show positive relationships between risk management practices and the various aspects of risk management process, and some findings (e.g. Boston Consulting Group, 2001; Al-Tamimi, 2002; KPMG, 2003; Parrenas, 2005; Al-Tamimi and Al-Mazrooei, 2007) show the important aspect of risk management practices by various financial institutions. In the context of Islamic banking, studies made on theoretical side of risk and risk management in Islamic banking (e.g. Iqbal and Mirarkor, 2007; Akkizidis and Khandelwal, 2008; Grais and Kulathunga, 2007; Haron and Hin Hock, 2007; Greuning and Iqbal, 2007; Sundararajan, 2007; Archer and Haron, 2007) explain the framework and the aspect of risk management process, and some empirical evidence (e.g Khan and Ahmed, 2001; Noraini, 2005) examine the perception and level of risk management practices by IBs.

3.1 Understanding risk and risk management

It is important for staff of banking institutions to understand the aspect of risk in the banking operations and the risks that are inherent and exposed in their business operations. Better understanding of risk management is also necessary especially in the financial intermediation activities where managing risk is one its important activities. A study conducted by Boston Consulting Group (2001) found that the sole determining success factors is not the technical development but the ability to understand risk strategically and also the ability to handle and control risk organizationally. Secondly, in order to realize a risk based management philosophy, the attitude and mindset of the employees need to be changed whereby they must be brought to understand that managing risk is crucial for success. This implies that there must be intensive training, clearly defined structures and responsibilities, as well as commitment to change. In addition, it was identified that banks in North America and Australia concentrate on risk management primarily to enhance their competitive positions. Meanwhile in Europe, Asia and particularly in South America, risk management is considered primary from the perspective of regulatory requirements. Then, Al-Tamimi and Al-Mazrooei (2007) found that the UAE banks staff have good understanding of risk and risk management, which might give an indication about the ability of these banks to manage risks efficiently in the future. Moreover, understanding risk and risk management had positive effect on risk management practice although it is insignificant.

From the literature, it shows that understanding risk and risk management is an important factor of risk management practices; hence, the proposed hypothesis is as follows;

H1: There is a positive relationship between understanding risk and risk management; and risk management practices.

3.2 Risk identification

There are few conceptual studies on risk identification of financial institutions (e.g. Kromschroder and Luck, 1998; Luck 1998; Tchankova, 2002; Barton et al. 2002) and few empirical studies that include risk identification of banks (e.g. Al-Tamimi, 2002; Al-Tamimi and Al-Mazrooei, 2007). Risk identification is the first stage of risk management (Tchankova, 2002) and a very important step in risk management (Al-Tamimi and Al-Mazrooei, 2007). The first step in organizing the implementation of the risk management function is to establish the crucial observation areas inside and outside the corporation (Kromschroder and Luck, 1998). Then, the departments and the employees must be assigned with responsibilities to identify specific risks. For instance, interest rate risks or foreign exchange risks are the main domain of the financial department. It is important to ensure that the risk management function is established throughout the whole corporation; i.e. apart from parent company, the subsidiaries too have to identify risks, analyze risks and so on.

There are many other approaches for risk identification, for instance, scenario analysis or risk mapping. An organization can identify the frequency and severity of the risks through risk mapping which could assist the organization to stay away from high frequency and low severity risks and instead focus more on the low frequency and high severity risk. Risk identification process includes risk-ranking components where these ranking are usually based on impact, severity or dollar effects (Barton et al. 2002). Accordingly, the analysis helps to sort risk according to their importance and assists the management to develop risk management strategy to allocate resources efficiently.

In relation to commercial banks' practice of risk management, Al-Tamimi (2002) found that the UAE commercial banks were mainly facing credit risk. The study also found that inspection by branch managers and financial statement analysis are the main methods used in risk identification. The main techniques used in risk management are establishing standards, credit score, credit worthiness analysis, risk rating and collateral. The recent study by Al-Tamimi and Al-Mazrooei (2007) was conducted on banks' risk management of UAE national and foreign banks. Their findings reveal that the three (3) most important types of risks encountered by UAE commercial banks are foreign exchange risk, followed by credit risk, then operating risk. Not only that, there is no significant different on risk identification between UAE national and foreign bank, hence, the UAE banks clearly identified the potential risks relating to each of their declared aims and objectives. Moreover, risk identification is positively significant to influence risk management practices.

In the case of Islamic banks, studies made especially on risk identification and risk mitigation includes the work of Haron and Hin Hock (2007) on market and credit risk, and Archer and Haron (2007) specifically on operational risk. Haron and Hin Hock (2007) explain the inherent risk i.e. credit and market risk exposures in IBs. Also, they illustrate the notion of displaced commercial risk that is important in IBs. They conclude that certain risks may be considered as being inherent in the operations of both Islamic and conventional banks. Although the risk exposures of IBs differ and may be complex

than conventional financial institution, the principles of credit and market risk management are applicable to both. In addition, the IFSB's standards on capital adequacy and risk management guiding principles mark the first steps in an ongoing process of developing prudential standards and filling regulatory gaps in the field of Islamic finance. Apart from those two risks, Archer and Haron (2007) show that IBs are exposed to a number of operational risks that are different from those face by conventional banks. They argue that the complexities of a number of their products, as well as there relative novelty in the contemporary financial services market, combined with the fiduciary obligations of Islamic bank when it acts as a Mudarib, imply that for IBs operational risk is very important consideration. Because of that, the IFSB has taken the position while Investment Account Holders (IAHs) may be considered in the absence of misconduct and negligence by the Islamic bank to bear credit and market risks of assets in their funds have been invested by the bank, the latter must be considered as being exposed to the operational risk arising from its management of those funds.

Empirical studies made by Khan and Ahmad (2001) found that IBs face some risks arising from profit-sharing investment deposits. Here, the bankers considered these unique risks more serious than conventional risks faced by financial institutions. Also, the surveys show that the Islamic bankers judge profit sharing mode of financing (i.e. diminishing Musharakah, Musharakah and Mudarabah), and product-deferred sale (i.e. Salam and Istisa') are riskier than Murabaha and Ijarah. The results of survey of risk perception in different modes of financing shows that risk level is considered elevated are shows in Table 2. 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 and Mirarkhor, 2007). Also, Noraini (2005) indicates that credit risk in Islamic banks perceived to be the most important risk.

Table 2: Risk perception: Risks in different modes of financing (scale 1-5)

Instrument	Credit risk	Mark-up risk	Liquidity risk	Operational risk
Murabahah	2.56	2.87	2.67	2.93
Mudarabah	3.25	3.00	2.46	3.08
Musharakah	3.69	3.40	2.92	3.18
Ijarah	2.64	3.92	3.10	2.90
Istisna	3.13	3.57	3.00	3.29
Bay' al-Salam	3.20	3.50	3.20	3.25
Diminishing Musharakah	3.33	3.40	3.33	3.40

Source: Khan and Ahmed (2001)

Finally, from the literature, it is suggested that risk identification is one of the important step of risk management practices; hence, the proposed hypothesis is as follows:

H2: There is a positive relationship between risk identification and risk management practices.

3.3 Risk analysis and assessment

There are many conceptual studies made on risk analysis and assessment by reference to measurement and mitigation of risk. In practice, it is useful to classify the different risks according to the amount of damage they possibly cause (Fuser et al, 1999). This classification enables the management to divide risks that are enabling to threat the existence of the corporation from those which can only causing slight damages. Frequently, there is an inverse relationship between the expected amount of loss and its corresponding likelihood, i.e. risks that will cause a high damage to corporation, like earthquakes or fire, occur seldom, while risks that occur daily, like interest rate risks or foreign exchange risks, often cause only relatively minor losses, although these risks can sometimes harm the corporations seriously. The empirical findings by Al-Tamimi and Al-Mazrooei (2007) highlighted that UAE banks are somewhat efficient in analysing and assessing risk and there is a significant different between UAE national and foreign banks in the practice of risk analysis and assessment. Additionally, the findings show that risk analysis and assessment are influencing risk management practices. It is also mentioned by Drzik (1995) that the BAI Risk Management Survey showed that large bank in the US had made a substantial progress in their development and implementation of risk measures. The measures use not only for risk control purposes, but also for performance measurements and pricing.

In the context of Islamic banking, few conceptual studies (e.g. Sundararajan, 2007; Jackson-Moore, 2007) discuss the risk measurement aspects particularly on the unique risk. A comprehensive risk measurement and mitigation methods for various risk arising from Islamic financing activities and from the nature of profit and loss sharing (PLS) in the source of funds especially investment account holders (IAHs) are explained by Sundararajan (2007). He concludes that the application of modern approaches to risk

measurement, particularly for credit and overall banking risks is important for IBs. Also, he suggests that the need to adopt new measurement approaches is particularly critical for IBs because of the role IAHs play, the unique mix of risks in Islamic finance contracts. However, Noraini (2005) indicates that IBs are perceived not to use the latest risk measurement techniques and Shari'ah compliant risk mitigation techniques due to different Shari'ah interpretation of these techniques. Also, appropriate measurement of credit and equity risks in various Islamic finance facilities can benefit from systematic data collection efforts, including by establishing credit and equity registry. Jackson-Moore (2007) suggests that bank need to start collecting data, and there can be significant advantages in pooling information and using common definitions, standards, and methodologies for operational risk which is argued can lead to significant losses in all financial institutions.

Finally, it is found that risk analysis and assessment particularly on measuring risk in banking institutions is important for risk management practices. Hence, the proposed hypothesis is as follows:

H3: There is a positive relationship between risk analysis and assessment; and risk management practices

3.4 Risk monitoring

Effective risk management requires a reporting and review structure to ensure that risks are effectively identified and assessed and that appropriate controls and responses are in place (IRM, AIRMIC and ALARM; 2002). Risk monitoring can be used to make sure that risk management practices are in line and proper risk monitoring also helps bank management to discover mistake at early stage (Al-Tamimi and Al-Mazrooei, 2007). Monitoring is the last step in the corporate risk management process (Pausenberger and Nassauer, 2002). According to them, control has to be established at different levels. The control by the management board will not be enough to ensure the effective functioning of the risk monitoring system, because the management board members do not have time on their hands to exercise extensive control. Hence, the management board will install an independent unit to complete the task of internal supervision. This task is the responsibility of the internal audit. Also, the supervisory board is obliged to control the risk management process. The supervisory board is supported by the auditor. If the auditor discovers a defect, he will have to inform the supervisory board and the management board. Finally, the shareholders of the corporation can use their rights to demand information in order to judge the efficiency of the risk management system. The director's report enables the shareholders to assess the status of the corporation knowledgeably and thoroughly.

Khan and Ahmad (2001) conducted a survey of risk management practices and found that on average the lowest percentage is on the measuring, mitigating and monitoring risk i.e. 69% score as compared to risk management policies and procedures i.e. 82.4%, and internal control of Islamic banks i.e. 76%. Al-Tamimi and Al-Mazrooei (2007) found that there is significant difference between UAE national and foreign banks

in risk monitoring and controlling. Also, the UAE commercial banks have an efficient risk monitoring and controlling system and it has positive influence on risk management practices.

Finally, risk monitoring is important process to ensure that risk management effectively been practiced by banks, hence, the proposed hypothesis is as follow:

H4: There is a positive relationship between risk monitoring and risk management practices.

4. Conclusion

In conclusion, the conceptual and empirical literatures have explained the relationships between risk management practices and the aspects of risk management process. Further researches are needed to prove empirically the hypotheses suggested and the factors influence risk management practices can be determined. Hence, several contributions can be achieved in the aspect of Islamic banking especially to the various stakeholders of IBs, namely the regulator, shareholders, management team, depositors and public in general. In the aspect of academic, the empirical evidence of the relationships is important to add value in the literature by supporting the previous findings and theories. Finally, this paper contributes by providing some gaps that need to be filled in the area of Islamic banking.

References

Akkizidis, I. and Khandelwal, S. K. 2008, "Financial Risk Management for Islamic Banking and Finance", Palgrave Macmillan, First Ed.

Al-Tamimi, H. 2002, "Risk Management Practices: An Empirical Analysis of the UAE Commercial Banks", *Finance India*, Vol. XVI, No. 3, pp. 1045-1057.

Al-Tamimi, H. and Al-Mazrooei M., 2007, "Banks' Risk Management: A Comparison Study of UAE National and Foreign Banks", *The Journal of Risk Finance*, Vol. 8 No.4, pp. 394-409.

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

Baldoni, R. J. 1998, "A Best Practices Approach to Risk Management", *TMA Journal*, Jan/Feb, pp. 30-34.

Barton, T. L., Shenkir, W.G. and Walker, P. L. 2002, "Making Enterprise Risk Management Pay Off", USA, Prentice Hall PTR, Financial Times.

BCBS 2001, Consultative Document: Principles for the Management and Supervision of Interest Rate Risk, Bank for International Settlements.

BCBS 2006, Core Principles Methodology, Basel Committee on Banking Supervision, Bank for International Settlements.

Boston Consulting Group 2001, "From Risk Taker to Risk Manager: Ten Principles for Establishing a Comprehensive Risk Management System for Banks".

Drzik, J. 1995, "CFO Survey: Moving Towards Comprehensive Risk Management", *Bank Management*, Vol. 71, pp.40.

Fuser, K., Gleiner, W. and Meier, G. 1999, "Risikomanagement (KonTraG) – Erfahrungen aus der Praxis", *Der Betrieb*, Vol. 52, No. 15, pp. 753-758.

Grais, W. And Kulathunga, A. 2007, "Capita; Structure and Risk in Islamic Financial Services" in Archer, S. and Karim, R. A. A. 2007, "Islamic Finance: The Regulatory Challenge", John Wiley & Son (Asia) Pte Ltd.

Greuning, H. and Iqbal, Z. 2007, "Banking and Risk Environment" in Archer, S. and Karim, R. A. A. 2007, "Islamic Finance: The Regulatory Challenge", John Wiley & Son (Asia) Pte Ltd.

Haron, A. and Hin Hock, J.L. 2007. "Inherent Risk: Credit and Market Risks" in Archer, S. and Karim, R. A. A. 2007, "Islamic Finance: The Regulatory Challenge", John Wiley & Son (Asia) Pte Ltd.

Harrington, S.E. and Niehaus, G. R. 1999, "Risk Management", Irwin/McGraw-Hill, New York.

IFSB 2005, "Guiding Principles of Risk Management for Institutions (Other than Insurance Institutions) Offering only Islamic Financial Services", Islamic Financial Services Board.

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

IRM, AIRMIC and ALARM 2002, A Risk Management Standard.

Jackson-Moore, E. 2007, "Measuring Operational Risk" in Archer, Simon and Karim, R. A. A. 2007, "Islamic Finance: The Regulatory Challenge", John Wiley & Son (Asia) Pte Ltd.

Khan, T., and Ahmed, H. 2001, "Risk Management: An Analysis of Issues in Islamic Financial Industry" IRTI/IDB Occasional Paper, No. 5.

Kromschroder, B. and Luck, W 1998, “Grundsatze risikoorientierter Unternehmensuberwachung” *Der Betrieb*, Vol. 51, No. 32, pp. 1573-1576.

KPMG 2003, Basel II – A Closer Look: Managing Economic Capital.

Luck, W. 1998, “Elementa eines Risiko-Management Systems”, *Der Betrieb*, Vol. 51, No. 1/2, pp. 8-14.

Noraini, Mohd Ariffin 2005, “Enhancing Transparency and Risk Reporting in Islamic Banks”, Unpublished doctoral dissertation, University of Surrey, School of Management.

Parrenas, J. C. 2005, “Bank’s Risk Management Practices: A Survey of Four Asian Emerging Markets".

Pausenberger and Nassauer 2000, “Governing the Corporate Risk Management Function”, in Frenkel, M. Hommel, U. and Rudolf, M. 2005, “Risk Management: Challenge and Opportunity”, Springer.

Tchankova, L. 2002, “Risk Identification – basic stage in risk management”, *Environmental Management and Health,* Vol 13, No. 3, pp 290-297.

Sundarajan, V. 2007, “Risk Characteristics of Islamic Products: Implications for Risk Measurement and Supervision” in Archer, S. and Karim, R. A. A. 2007, “Islamic Finance: The Regulatory Challenge”, John Wiley & Son (Asia) Pte Ltd.