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MANAGEMENT ACCOUNTING AND RISK MANAGEMENT PRACTICES IN FINANCIAL INSTITUTIONS

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Abstract. The aim of this paper is to report the results of a study on management accounting and risk management practices in financial institutions. The research method involved administering a questionnaire to 106 financial institutions listed on the Malaysian Central Bank's website and the respondents were the chief financial officers (CFO) or the most senior positions in the finance department of the institutions. Based on the IFAC's (1998) framework, it was found that the most widely practiced were the management accounting practices at Stage 1, followed by practices of Post 1995. This finding shows that despite the emergence of contemporary management accounting practices (Stage 4 onwards), traditional management accounting that focuses on financial performance and budgetary control is still widely practiced by financial institutions in Malaysia. As for the risk management practices, most of the firms have either implemented a complete or partial Enterprise Risk Management (ERM) framework. The findings from the survey showed that management accounting practices related to financial statement and ratio analysis were perceived to contribute most towards risk management. Budgetary control, budgeting and strategic planning were also perceived to be important in managing operational risks.

Keywords: Management accounting; risk management; financial institutions

Abstrak. Tujuan kertas kerja ini adalah untuk melaporkan hasil kajian terhadap amalan perakaunan pengurusan dan amalan pengurusan risiko di institusi kewangan. Data dikutip menggunakan borang soal selidik yang dihantar kepada 106 institusi kewangan yang tersenarai di dalam website Bank Negara Malaysia, di mana Ketua Pegawai Kewangan atau pegawai terkanan di jabatan kewangan institusi-institusi tersebut dilantik sebagai responden kajian. Analisis amalan perakaunan pengurusan berdasarkan kerangka IFAC (1998) menunjukkan bahawa amalan yang lazim diguna pakai adalah amalan di peringkat pertama, diikuti dengan amalan selepas era 1995. Dapatan ini menunjukkan bahawa amalan perakaunan pengurusan tradisional masih diguna pakai secara meluas oleh institutsi-institusi kewangan di Malaysia walapun amalan-amalan kontemporari (peringkat ke 4 dan ke atas) telah diperkenalkan. Bagi amalan pengurusan risiko, kebanyakan institusi telah melaksanakan kerangka Enterprise Risk Management (ERM) secara menyeluruh atau sebahagian. Amalan perakaunan pengurusan berkaitan penyata kewangan dan analisis nisbah dianggap sebagai memberikan sumbangan utama kepada pengurusan risiko. Kawalan belanjawan, belanjawan dan pengurusan strategik juga dianggap penting dalam pengurusan risiko operasi.

Kata kunci: Perakaunan pengurusan; pengurusan risiko; institusi kewangan

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1.0 INTRODUCTION

In the past, the financial industry was a highly regulated industry where many of the products offered, and the rates charged and paid were controlled by regulations. The number and types of products offered were also limited and there was a strict regulation and control on geographic expansion. Hence, there was a limited need for the use of management accounting information in performing either day-to-day or longer-term tasks (Kafafian, 2001). However, deregulation and globalisation have put an end to this complacent approach. Nowadays, financial institutions trade an extensive range of financial assets that is both complex and diverse, including both traditional assets (deposits and loans) and derivatives. In addition, responding to calls towards greater financial innovation and promoting greater shareholder value, mergers and acquisitions between insurers, banks and asset management companies have taken place. This has resulted in the emergence of financial conglomerates that further exacerbates the competitive environment, especially for standalone entities.

The current environment is becoming even more complex as these financial institutions face a diverse customer base with a highly integrated business value chain and they are consequently exposed to a wide array of risks. To meet this dynamic, uncertain and complex environment that is undergoing rapid transformation, financial institutions have to enhance their competitive edge. The ability of management to make informed decisions is linked to the quality of management information available to them (Kafafian, 2001; Rezaee, 2005) and good information arises from a good management accounting programme that serves as an important tool for providing decision-making information (Cole, 1988). Hence, managerial accounting concepts and techniques are currently being added to the financial reporting structure of financial institutions (Rezaee, 2005). As an internal management reporting system, management accounting can signal problem areas and allow management to react swiftly and assuredly to meet the challenges of globalisation and liberalization (Rezaee, 2005; Cobb *et al*. 1995; Cole, 1988).

Financial institutions play an important role in the economy as they channel funds from surplus to deficit units in the economy. This intermediary role is crucial for the efficient allocation of resources in a modern economy. The health of the financial system is a public policy concern since the financial system is prone to periods of instability, which can generate sizeable negative spillover effects (Llewellyn, 1999). The spillover effects are further exacerbated by the increased interdependence among the financial institutions, which is due to the growth in the volume of financial transactions and the greater integration of the capital markets. Hence, besides having management accounting tools and techniques, financial institutions are also required to have robust risk management system to maintain the safety and soundness of the institutions. Both management accounting and risk management undertake 'ex ante' and 'ex post' perspectives. Management accounting provides information for planning ('ex ante') and control ('ex post') in an organization. At the same time in risk

management, risk-taking decisions are under an 'ex ante' perspective, and once risk decisions are made, risk monitoring takes place from an 'ex post' perspective (Bessis, 2002). For financial institutions that are in the business of managing risks, management accounting can play an important role in providing information for risk management. In fact, several authors (Collier *et al.* (2004), Williamson (2004) and Soin (2005)) have proposed that MAS supports risk management activities. Both management accounting and risk management are expected to complement each other and serve the purpose of aiding enterprise decision-making. Management accounting is seen as supporting risk management and control, whether by quantifying objectives; estimating the consequences of potential outcomes from risk events; analyzing the cost and benefits of risk management practices; or comparing actual performance to risk faced (Williamson, 2004).

This paper attempts to contribute to the management accounting literature in two ways. First, the paper seeks to contribute to the development of knowledge on the extent of management and risk management practices in financial institutions. The need to study management accounting, specifically for the financial services, stems from the underdevelopment of management accounting research in this sector (Helliar *et al.* 2002; Billings and Capie, 2004). Second, this paper provides empirical evidence on the extent to which some management accounting tools and techniques support risk management.

2.0 BACKGROUND LITERATURE

2.1 Financial Institutions in Malaysia

Financial institutions in Malaysia were badly hit by the 1997 Asian financial crisis. Post crisis, financial institutions were under a lot of stress, and, consequently, a bank restructuring plan was implemented to (a) consolidate to create a core set of strong and large banking institutions that are competitive, innovative and creative; (b) broaden and deepen the associated markets and build resilience in the financial architecture; (c) enhance and strengthen the supervisory framework; (d) accelerate development of the bond market and promote greater securitization; and (e) improve banking efficiency and upgrade risk management capability in the system (See-Yan, 2000). Restructuring exercises were undertaken to increase the stability and soundness of the banking institutions. As of March 2008, there were 22 commercial banks (of which 9 are domestic banks and 12 are foreign-controlled), 13 Islamic banks (of which 3 are foreign-controlled), 15 investment banks and 7 money brokers. The Central bank is responsible for regulating and supervising the banking institutions.

Compared to the banking sector, the insurance industry remains relatively less developed and insurance companies are tapping into this opportunity by developing new delivery channels, notably through bancassurance (BNM, 2007). Under

bancassurance, the market penetration is increased as banks and insurance companies collaborate to distribute insurance products to bank customers. With bancassurance, banks are able to gain greater income stability, expand product offerings and make productive use of customer databases and branch networks. As for the insurers they are able to expand customer databases, enhance the ability to segmentise markets in support of more effective product design and marketing efforts and lower distribution costs (BNM, 2004). The development financial institutions (DFIs) complement the banking institutions in meeting the financing requirements of the economy, particularly in support of the economic and social development of the nation.

The increased number of foreign-controlled financial institutions in Malaysia further exacerbates the competitive environment. Local financial institutions have to merge among themselves to strengthen their positions. With the restructuring exercises, financial institutions are expected to be stronger to compete in the ever challenging environment. The current pace of technological and economic innovation in the financial markets illustrates the critical need for information as an aid for sound decision-making in financial institutions (Hussain, 2000). As the financial industry continues to consolidate, diversify, and become more competitive and challenging, the management accounting and information functions have grown rapidly and taken on an increasing importance (Kafafian, 2001). Management accounting is a tool for achieving high performance as it provides a measurement of performance, warning of risks, information for decisions, and data for planning (Cole, 1988).

Financial institutions act as intermediaries between the surplus and deficit units in the economy. This financial intermediary role is crucial for the efficient allocation of resources in a modern economy (El-Hawary *et al*. 2007; Obaidullah, 2005). As what can be observed from the latest world financial crisis, a collapse of the financial institutions would affect the stability of the whole economy, and hence, it is crucial to maintain the soundness and the stability of the financial institutions. Hence, besides having an efficient management accounting systems that is crucial for internal decision-making, planning and control, financial institutions also need to be regulated to protect the interests of customers and prevent systemic risk in the economy. Consequently, financial institutions are governed by both local and international regulation frameworks. In light with the recent emphasis on strengthening the financial sector, financial institutions in Malaysia were expected to comply with the International Convergence of Capital Measurement and Capital Standards: A Revised Framework (generally known as Basel II) by January 2008. This framework is based on three pillars. The first pillar requires banks to set and hold a minimum amount of capital as a cushion against market, credit and operational risks. The second pillar is supervisory review and the third pillar stresses market discipline. In order to comply with Basel II financial institutions are required to have robust risk management systems.

2.2 Management Accounting Practices

The International Federation of Accountants (IFAC, 1998) defines management accounting as the process of identification, measurement, accumulation, analysis, preparation, interpretation, and communication of information (financial and operational) used for the planning, control and effective use of resources by management. Over the years, the focus of management accounting has shifted from its simple role of cost determination and financial control to the focus of value creation through the effective use of resources (Abdel-Kader and Luther, 2008; Suzana *et al.* 2005). According to IFAC's (1998) framework, the evolution of management accounting can be categorized into four identifiable stages. In Stage 1, that is prior to 1950, most companies focused on cost determination and financial control. The main sources of data were financial statements consisting of income statements, balance sheets and cash flow statements. The use of ratio analysis, financial statement analysis and budgeting became widespread with management accounting information becoming defined in quantitative and financial terms. There was greater attention to internal matters, especially production capacity (Abdel-Kader and Luther, 2008).

In the second stage of evolution, 1950–1965, the emphasis shifted to the provision of information for management planning and control. During this stage accounting and management accounting techniques that support decision analysis were introduced. These included marginal costing, standard costing, Cost-Volume-Profit (CVP) analysis, Break-even Analysis and transfer pricing. However, "the management controls were oriented towards manufacturing and internal administration rather than strategic and environmental considerations" (Abdel-Kader and Luther, 2008: 4). Consequently, the practice of management accounting was still centred on the manufacturing sector with control activities that were more reactive rather than proactive.

The world recession in the 1970s, followed by increased global competition and the rapid development of technology in the early 1980s, shifted the focus of management accounting to reducing resources wasted in business processes (Abdel-Kader and Luther, 2008). This represents the third stage of the management accounting evolution – 1965 to 1986 – with the emphasis on the use of process analysis and cost management technologies. The aim was to eliminate non-value added activities with techniques such as Activity-Based Costing (ABC), Total Quality Management (TQM), Management Resource Planning (MRP) and multiple regressions. This was the beginning of the use of sophisticated management accounting information for decision making, planning and control. Besides focusing on internal matters, external factors such as a change in the environment and customers preferences were given priority. Probability analysis was administered for performance evaluation and the development of computers helped information to be more effectively managed than before.

The shift of focus from waste reduction to value creation, through the effective use of resources and technologies, typified Stage 4 (1985 to 1995) of the management accounting evolution. During this stage, it became important to identify the drivers

of customer value, shareholder value and organizational innovation. Contemporary management accounting techniques such as Just-In-Time (JIT), Target Costing, Balance Scorecard (BSC) and Strategic Management Accounting (SMA) gained dominance during this period. These management accounting tools and techniques are capable of considering a broad spectrum of information. The BSC for example considers financial and non-financial information while the SMA is externally focused. With the advancement in IT, management accounting information can be highly integrated with many functions in the organization and provision of information can be made in a timely manner. Hence, the sophistication of management accounting information is essential for value creation and for the long term success and survival of an organization (IFAC, 1998).

2.3 Risk Management Practices

Risk is generally referred to as the possibility of danger, loss, injury or other adverse consequences. The major risks faced by financial institutions include credit risk, market risk, interest rate risk, liquidity risk and operational risk (Bessis, 2002). The generic risk management framework includes four major risk management components – risk identification, risk measurement, risk mitigation and risk monitoring and reporting (Bessis, 2002). Financial institutions are required by regulators to have robust risk management systems. In addition to compliance purposes, risk management systems are essential for internal use to ensure safety and soundness of the institutions as well as the whole financial system. As financial institutions are fundamentally in the risk management business (Bowling and Rieger, 2005; Hakenes, 2004; Bowling *et al*. 2003), interest in the implementation of Enterprise Risk Management (ERM) among financial services firms has grown steadily. ERM has been proposed as the best practice for risk management (Ballou *et al*. 2006; Scholey, 2006; Beasley *et al*. 2006; McWhorter *et al*. 2006). Financial services companies were among the first to adopt ERM techniques and appoint Chief Risk Officers (CROs) (Platt, 2004; Beasley *et al*. 2005). ERM goes beyond compliance and has increasingly been seen as a source of competitive advantage because it is broad in scope and does not limit consideration to the specific items a regulator may require (Platt, 2004).

ERM is sometimes referred to as "strategic risk management", "integrated risk management" or "holistic risk management" and moves away from the "silo" approach of managing different risks within an organization separately and distinctly to a more comprehensive view of risk and risk management (CAS, 2003; Kleffner *et al*. 2003; Liebenberg and Hoyt, 2003). Organizations can use ERM to manage the various strategic, market, credit, operational and financial risks that they confront (Banham, 2004). ERM also broadens the focus of risk management from a protective stance to a strategic stance (Collier *et al*. 2004) as it increases the ability of the board and senior management to oversee the portfolio of risks facing an enterprise (Beasley *et al*. 2005). ERM centralizes management under a chief risk officer or ERM committee

that manages the different overseers of specific risks. The chief risk officer or the ERM committee identifies the overall risk that the entity can tolerate, assesses mitigation tactics and generally takes advantage of risk opportunities (Banham, 2004). A core element of ERM is that risks and strategy are aligned and it is integral to strategic planning and performance assessment (Beasley *et al*. 2005).

According to Pillar 1 of the Basel II framework, risks can be categorised into three main types, which are credit risks, market risks and operational risks. Credit risk is risk of default in payment by client (Bessis, 2002; Iqbal and Mirakhor, 2007). Credit risk can be minimized by securing a guarantee, pledge or collateral from clients. It can also be minimized by being prudent in granting credits to customers. Market risk is the risk that the value of an investment will decrease due to the movement of market factors (Bessis, 2002). Market risk for a financial institution can be related to unfavourable price movement related to rate of return, interest rate, foreign exchange rates, equity and commodity prices (Iqbal and Mirakhor, 2007). Asset-liability management and financial risk management can be used to manage market risk.

Operational risk is the loss due to any disruption in the firm's operational processes (Marshall, 2001). The Basel II definition of operational risk is "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events." "It covers all organizational malfunctioning, of which consequences can be highly important and, sometimes, fatal to an institution." (Bessis, 2002, p. 12). Global operation, emergent of more complex products and services, the increased in volumes and volatility of transactions lead to greater operational risk (Marshall, 2001). The main purpose of management accounting is to provide information for internal decision making relating to business processes, people and investment in systems. Relevant information provided by management accounting systems will help managers to make more effective decisions, which in turn help to prevent unexpected loss. The management accounting information will give indicators on the performance and actions that could be taken to improve future performance. Thus, in this study, only operational risk was considered as it was assumed to be more related to management accounting information compared to credit and market risk. In fact, Andersen (2008) asserts that accounting and management control systems are tools to manage operational risks. For example, efficiency can be improved by redesigning the operational tasks and the operational processes with techniques such as reengineering and activity-based costing (Marshall, 2001). At the same time, strategic business planning and well-organized budgeting process and consistent follow-up with any operating variances to budget can limit unexpected losses (Marshall, 2001).

2.4 Management Accounting and Risk Management

Financial institutions trade a complex and extensive range of financial assets. They also face a diversity of customers and are exposed to a wide array of risks. Thus, to

cope with these complexities they must have efficient management accounting systems to provide information on managing and monitoring the performance of their traded assets. Management accounting tools and techniques are required to produce performance reports by portfolio and by specific product type. The reports should include both assets in securitized pools and total managed assets. The management accounting system should also be able to provide information related to compliance issues and be able to provide necessary information to make appropriate disclosures on regulatory reports and other required financial statements.

In the latest development where the various functions in an organization are integrated with one another, management accounting systems, which function is to provide information for decision making, should play an important role in risk management. Moreover, with the implementation of ERM, where risks are to be aggregated across different types of risk and across business units to obtain enterprise-wide risk situations, financial institutions are integrating their business lines performance management with risk management. Hence, management accounting systems which are crucial for control and performance management will be closely linked to risk management (Collier *et al*. 2007; Soin, 2005; Williamson, 2004). However, this linkage has only been recognized recently and the literature on this issue is still limited. The following section reviews the few studies on the linkage between management accounting and risk management.

2.4.1 Empirical Studies on Management Accounting and Risk Management

Williamson (2004) proposed how management accounting and management control can contribute to the practice of ERM as an example of emerging risk management practice. Management accountants have expertise in identifying, analyzing and communicating management information for planning, control, performance measurement and decision making and should therefore be able to help develop techniques for ERM. In addition, with an understanding of organizational, behavioural as well as economic implications, management accountants should be able to better interpret and communicate risk management information. Furthermore, risk based management accounting can be carried out in which assessed risks are compared to objectives, standards, forecasts, budget and actual performance. Subsequently, the risk implications can be considered in strategy; planning; control; management of revenue; costs and cash flow; and management of value drivers (Williamson, 2004).

Soin (2005) and Mikes (2006) studied the linkage between management accounting and risk management in financial institutions. Consistent with Williamson (2004), Soin (2005) proposed that management accounting does have a potential role in supporting risk management. She investigated the contribution of management accounting and control information on the practice of risk management in the UK financial services sector. Particularly, she investigated whether current management

accounting system support the changing patterns of demand for information about risk by corporate stakeholders. However, based on interviews, her findings suggest that risk management systems in the financial services sector are not utilizing management accounting techniques and that there is no clear role for management accountants in risk management. Lack of emphasis on management accounting control systems in the financial services sector was cited as the reason for the findings above. There is some emphasis on budgeting, cost control and performance measurement, but not in relation to risks (Soin, 2005).

Mikes (2006) on the other hand studied both risk management and management accounting control as multiple control systems in an organization. He conducted a case study to explore the changing context and internal dynamics of a multiple control system acting as the divisional control in a financial services organization. Based on a political and institutional perspective, the study shows how two control systems, which are, firm-wide risk management system and accounting controls, complemented each other (as the contingency theory suggests) as well as competing with one another for relevance and attention from the top management. In this study accounting control possessed institutional appropriateness compared to risk control (ERM). Hence, accounting control won over risk control and was used in decision making (Mikes, 2006).

Collier *et al.* (2007) investigated the roles of the management accountant in risk management. Similar to Williamson (2004) and Soin (2005), they proposed that management accountants – who have skills in analysis of information, systems, performance and strategic management – should have a significant role to play in developing and implementing risk management. The survey results show that there was little integration between management accounting and risk management and that the involvement of management accountants in risk management was only marginal. However, results from post survey interviews indicate that management accountants do play an important role in risk management, especially in analyzing the impact of risks to support risk managers. The finance director was identified as having a pivotal role in risk management (Collier *et al.* 2007), and, in most organizations, management accounting functions are under the responsibility of the finance director. The finding by Collier *et al.* (2007) that management accounting plays an important role in risk management contradicts Soin's (2005) finding. Due to this inconsistent finding, more research into the role of management accounting in risk management is required.

Integration between management accounting and risk management is possible in the area of performance measurement. There has been a call for integrating the balance scorecard (BSC) as a strategic performance measurement system and ERM as a proposed best practice for risk management (Ballou *et al.* 2006; Scholey, 2006; Beasley *et al.* 2006; McWhorter *et al.* 2006). The scorecard can be enhanced by including goals and objectives for risk management and by capturing performance-

based risk metrics. The BSC has four perspectives which are learning and growth for employees, internal business processes, customer satisfaction and financial performance. Beasley *et al*. (2006) proposed some guidelines of how the integration can be done. First, in order to ensure that all employees embrace a common set of definitions and perspectives on risk management, training objectives and performance measures related to learning and education about risk management can be added to the learning and growth perspective of the BSC. Second, as risks can also arise from internal business processes, goals related to variation of risks within a business process and related risk performance metrics should be integrated into the internal business processes perspective. Third, include risk goals and performance measures related to customers, markets and reputation in the customer satisfaction perspective. Finally, any risk management system should consider the costs of responding to risks relative to its benefits and the financial performance perspective of the BSC provides the natural connection for ERM cost/benefit analysis of response (Beasley *et al*. 2006). McWhorter *et al*. (2006) provides empirical evidence that strategic performance measurement systems improve risk management.

Management accounting provides information for control and performance management is seen as the main task of the management accounting function (Otley, 2001). In addition to management accounting, risk management is another mode of internal control (Collier *et al*. 2004; Williamson, 2004; Soin, 2005; Mikes, 2006) that is important for the performance of financial institutions. There is an implicit assumption that management accounting system (MAS), as part of an organization's management control system, play an important role in risk management (Collier *et al*. 2004). According to Collier *et al*. (2004), Williamson (2004) and Soin (2005), management accounting supports risk management as management accounting can be seen as part of a wider management information system in an organization (Upchurch, 2002; Bouwens and Abernethy, 2000).

3.0 RESEARCH METHOD

Postal questionnaires were used to collect the empirical data. The population of the study was financial institutions in Malaysia. There were limited number of financial institutions in Malaysia, thus this study took the whole population of finance and insurance companies listed on the Malaysian Central Bank's website. Questionnaires were sent to 106 financial institutions (including commercial banks, Islamic banks, merchant/investment banks, discount houses, development financial institutions and insurance companies).

3.1 Questionnaire Development

In order to gather the information on management accounting practices, respondents were asked to indicate the extent to which 17 management accounting practices

have been successfully implemented in their organization using a Likert scale of 1 (not at all) to 5 (to a very great extent). The management accounting practices were listed based on the IFAC's (1998) framework, which is also used by the NAfMA[3] award organizing committee. However, only practices relevant to the services industry, particularly the financial services industry, were selected for this study. Footnotes explaining some of the practices were also included in the questionnaire. As for risk management practices, respondents were required to indicate the stage of enterprise risk management (ERM) implementation in their organization. This measure was adopted from Beasley *et al.* (2005). Five different stages, ranging from "complete ERM framework in place" to "no ERM framework in place and no plans to implement one" were listed and respondents were asked to tick the appropriate box. A definition of ERM was provided in the footnote.

The respondents' perception on the extent to which management accounting practices help to manage operational risks were measured based on a scale of 1 (not at all) to 5 (to a very great extent). The list of MA practices based on the IFAC's (1998) framework was also used for this purpose. The questionnaire was first pre-tested with seven academicians from the local universities. They were either experts in management accounting, or financial systems or research methodology. Pilot testing is important to ensure validity and reliability of research instruments (Sekaran, 2000), thus a pilot testing was conducted with two senior finance managers and six managers from the financial institutions. Two of them were personally interviewed and discussions were held on the relevance of the questionnaire items. The others mailed back the answers together with some comments and suggestions on the questionnaire. A revised draft of the questionnaire was prepared accordingly.

3.2 Questionnaire Administration

The questionnaire was mailed to the Chief Financial Officer (or the most senior position in the finance department) of each firm. The unit of analysis for this study is organization, thus top-level managers would be the most appropriate respondents. The pre-test also suggested that top-level managers would be familiar with all aspects of the questionnaire. Thus, the respondents were the Chief Financial Officer (CFO) or the most senior position in the finance department of the financial institutions. In addition, the CFOs (or the most senior position managers) were chosen because they were the ones responsible for management accounting and involve directly in risk management in the organizations. According to Rodeghier (1996), in survey research, contacts are very important and at least three contacts with the sample, each slightly

[3] National Award for Management Accounting – Award given to companies in Malaysia for management accounting best practices. The organizers and the awarding bodies are the Malaysian Institute of Accountants (MIA) and the Chartered Institute of Management Accountans (CIMA)

different in tone and content, are necessary to ensure a high return. Thus, one week after the survey packets were sent, phone calls were made to ensure that the organizations had received the packets. Five weeks after the first mailing, another set of questionnaire was sent to the non-respondents. Follow-up was made again through email and telephone calls after the second mailing.

3.3 Data Analysis

Data from the questionnaire survey was analysed using the Statistical Package SPSS version 15. Several steps were taken in the data analysis starting with data cleaning and screening, response rate and profile analysis. Descriptive analysis was used to determine management accounting and risk management practices and the perception on the extent to which management accounting practices help in managing operational risks.

72 responses were received, representing a response rate of 68%. As shown in Table 1, the largest number of respondents was Head of Finance/General Manager Finance/Vice President Finance (37.5%), followed by Finance Manager (23.6%), CFO/ Director of Finance (18.1%), Senior Manager Finance/Assistant Vice President Finance (15.3%) and others (5.6%). A total of 38 (52.8%) respondents have been holding the current positions between 1 and 3 years, 26 (36.1%) of them have been holding the current positions between 3 and 10 years, while 6 (8.4%) of them have been in the current positions for more than 10 years. Only 2 (2.8%) respondents did not specify the length that they were in the current positions.

Table 2 summarizes the profile of the firms involved in the survey. 27 (37.5%) of the firms offer conventional financial services only, 18 (25%) offer Islamic financial services only, while 27 (37.5%) offer both Islamic and conventional financial services.

Table 1 Profile of respondents

Background variable	**Categories**	**Frequency**	**Percentage** %
Job Designation	CFO/Director of Finance	13	18.1
	Head of Finance/GM Finance/Vice President Finance	27	37.5
	Senior Manager Finance/ Assistant VP Finance	11	15.3
	Finance Manager	17	23.6
	Others	4	5.6
Length of time holding current position	Between 1 to 3 years	38	52.8
	Between 3 to 10 years	26	36.1
	Between 10 to 20 years	4	5.6
	More than 20 years	2	2.8
	No information provided	2	2.8

Table 2 Profile of sample firms

Background variable	Categories	Frequency	Percentage %
Types of services	Conventional financial services/insurance	27	37.5
	Islamic financial services/insurance only	18	25.0
	Both Islamic and conventional financial services	27	37.5
Number of employees	Less than 100	15	20.8
	100 – 499	23	31.9
	500 – 999	13	18.1
	1000 – 1499	5	6.9
	1500 – 1999	1	1.4
	2000 – 2499	2	2.8
	2500 – 3999	5	6.9
	Above 4000	6	8.3
	No information	2	2.8
Annual Revenue	Less than RM100 million	13	18.1
	RM100 million to RM499 million	22	30.6
	RM500 million to RM999 million	13	18.1
	More than RM1 billion	13	18.1
	No information	11	15.3
Annual Total Assets	Less than RM500 million	7	9.7
	RM500 million to RM999million	8	11.1
	RM1billion to RM4.99 billion	22	30.6
	RM5 billion to RM9.99 billion	8	11.1
	RM10 billion to RM14.99 billion	3	4.2
	RM15 billion to RM19.99 billion	2	2.8
	RM20 billion to RM29.99 billion	4	5.6
	More than RM30 billion	9	12.5
	No information	9	12.5
Firm's Age	Less than 5 years	13	18.1
	5 to 10 years	8	11.1
	11 to 20 years	8	11.1
	21 to 30 years	10	13.9
	31 to 40 years	14	19.4
	41 to 50 years	6	8.3
	More than 50 years	11	15.3
	No information	2	2.8
Ownership Structure	Local (more than 50% locally owned)	53	73.6
	Foreign (more than 50% foreign)	18	25.0
	Joint venture (50% local and 50% foreign)	1	1.4

The majority of the firms (55 or 76.4%) had more than 100 employees. This indicates that the majority of the firms involved in this survey were large in size. In terms of total annual revenue, the majority of the firms (48 or 66.8%) had more than RM100 million of total annual revenue. Most of the firms also had huge total assets with 48 or 66.7% having more than RM1 billion of total assets, which further suggest that most of the firms surveyed were large in size. The majority of the firms (57 or 79.2%) had been in operation for more than five years and most of them were locally owned (53 or 73.6%).

4.0 RESULTS AND DISCUSSION

4.1 Management Accounting Practices (MAP) Based on the IFAC framework

Table 3 illustrates MAP classification according to the five stages of the IFAC framework.

Table 3 Stages of management accounting practices (MAP) based on IFAC framework

	Min	Max	Mean	Std. Deviation
MAP Stage 1				
Financial Statement and Ratio Analysis Budgetary Control and Budgeting	3.00	5.00	4.3819	.64181
MAP Stage 2				
Standard Costing Cost Benefit Analysis Relevant Costing and Decision Making Analysis	1.00	5.00	3.2245	.91465
MAP Stage 3				
Cost Control and Cost Management Statistical Analysis Productivity Analysis Quality Improvement Activities	1.50	5.00	3.5833	.78161
MAP Stage 4				
Strategic Cost Management Activity Based Costing / Management Strategic Management Accounting Benchmarking Economic Value Added (EVA) Balance Scorecard (BSC)	1.00	4.83	3.1458	.88233
MAP Post 1995				
Business Planning Business Strategy	1.00	5.00	4.0486	.82291

Analysis of the management accounting practices stages based on the IFAC framework revealed that the highest usage has been practices that belong to the first stage category. The first category was established before 1950 and the focus was on cost determination and financial control. This finding shows that despite the emergence of contemporary management accounting practices (Stage 4 onwards), traditional management accounting that focuses on financial performance and budgetary control is still widely practiced by financial institutions in Malaysia. This is expected as Kaplan and Atkinson (1998) noted that financial measures are the oldest, most widely practiced management accounting tool for two reasons. First, financial performance measures (such as profit) articulate directly with the organization's long-run objectives, which are always financial. Second, financial performance measures give an aggregate view of an organization's performance, which provides a summary measure of success of the organization's strategies and operating tactics (Kaplan and Atkinson, 1998).

There was a moderate use of stage 2 (1950 to 1965), which focuses on the provision of information for management planning and control. There was also a moderate use of stage 3 (by 1985) that emphasizes the reduction of resources waste in business processes. The use of stage 4 (by 1995) that stresses the creation of value through effective use of resources and technologies has also been moderate. Economic value added (EVA) is a relatively new concept of performance measures (Bardia, 2008) and the issue of whether the use of EVA for performance measures will lead to improved shareholder value is still inconclusive. Some studies reported that there is a positive relationship between EVA and shareholder value and some found no relationship at all (Kyriazis and Anastassis, 2007). This may explain why EVA has not been widely practiced by the sample firms at the time the survey was conducted.

In standard costing the unit cost is determined by multiplying the unit time by hourly expenses and this method is best used in processing areas where the work is repetitive and predictable (Cole, 1988). Unlike manufacturing companies where the time taken to manufacture a certain product is quite standardized and measurable the time taken to render a particular service may not be standardized causing difficulties in measurement and thus hinder the use of standard costing. Furthermore, a standard costing structure and system can be costly to develop and maintain as a large data base is required (Cole, 1988). It would be easier to use nonstandard costing or average item costing in which the unit cost is determined by dividing the total actual costs with the total volume (Cole, 1988). ABC/ABM was not widely practiced, which is consistent with the findings of other studies (Hussain, 2000; Chenhall and Langfield-Smith, 1998; Innes and Mitchell, 1995). Reasons cited in the literature for the lack of ABC implementation are resistance from personnel to change to a new system, more time consuming, incurring of extra costs and difficulties in identifying key activities, selecting appropriate cost drivers and accumulating cost data (Hussain, 2000).

Business planning and business strategies are classified as post 1995 practices and the extent of use of these practices is high. In summary, the findings indicate that financial services firms in Malaysia seem to focus more on stage 1 and the post 1995 stage of management accounting practices. Stage 1 focuses on financial performance and budgetary control. It is still the most widely used practice as it provides a summary of the organization's performance in implementing their plans and strategies. The post 1995 practices, that stress strategic processes, are widely practiced as they are important to gain a competitive advantage (Bhimani and Langfield-Smith, 2007).

4.2 RISK MANAGEMENT PRACTICES

Table 4 shows the stage of ERM development by the sample firms.

Table 4 Stages of ERM development

Stage of development	Frequency	Percentage %
Complete ERM framework in place	31	43.1
Partial ERM framework in place (i.e., some, but not all, risk areas addressed)	34	47.2
No formal ERM framework in place, but we have plans to implement one	6	8.3
Currently investigating concept of ERM, but have made no decision yet	1	1.4
No ERM framework in place and no plans to implement one	0	0.0

The proportion of firms that have a complete ERM framework in place and partial ERM framework in place was almost equal, with 31 (43.1%) with complete and 34 (47.2%) with a partial ERM framework in place. Only 6 (8.3%) organizations had no formal ERM framework in place and only one (1.4%) organization was currently investigating the concept of ERM. ERM moves away from the "silo" approach of managing different risks within an organization separately and distinctly to a more comprehensive view of risks and risk management centralising management under a Chief Risk Officer (Banham, 2004; CAS, 2003; Kleffner *et al*. 2003). The high percentage of complete and partial ERM implementation supports Platt's (2004) argument that financial services firms were among the first to adopt ERM and to appoint Chief Risk Officers as they are essentially in the business of managing risks (Bowling and Rieger, 2005; Hakenes, 2004; Bowling *et al*. 2003). This finding is also consistent with Beasley *et al.* (2005) that banking and insurance companies are more likely to implement ERM due to explicit calls for more effective risk management emerging from industry regulators or leaders.

Further analysis was carried out to determine whether company size varies among the stages of ERM development. Consistent with Yudistira (2004) and Iqbal and

Mirakhor (2007), company size was measured based on total assets. Since stages of ERM development was a categorical data and total assets was a continuous data, a Kruskal-Wallis test was used for this analysis (Pallant, 2005). Table 5 provides the result of the Kruskal-Wallis test.

The result in Table 5 shows that the observed significance level for the four stages of ERM was higher than the 0.05 confidence level. Hence, there was no significant difference in terms of company size among the different stages of ERM development, implying that the extent of ERM development was not related to company size. The fact that all financial institutions (regardless of size) are required by regulators to have robust risk management systems may explain why size did not determine stages of ERM development. Analysis was based on 63 cases since only 63 of the firms surveyed disclosed their total assets.

Table 5 Kruskal-Wallis test comparing the mean ranks of total assets amongst various ERM stages

Variable	ERM stages	N	Mean rank	Chi-Square (χ^2)	Asymp. Sig. (p)
Total assets	Complete ERM	28	30.23		
	Partial ERM	31	34.40		
	No formal ERM	3	21.40	$\chi^2 = 1.956$	0.582
	Currently investigating concept	1	39.00		

4.3 Management Accounting Practices (MAP) and Operational Risks

The respondents were also required to state their opinions on the extent of MAP helping in managing operational risks. Management accounting provides information for operational decision making and also for long term decision making. MAS provide relevant information for decision-making, such as resource allocation, whether to introduce new products or services or for performance evaluation. Thus, in this study only operational risk was considered because it was assumed to be more related to management accounting information compared to credit and market risks. Table 6 shows the extent to which MAP helps in managing operational risk as perceived by the respondents. Based on the rank of the mean score above, the results show that financial statement and ratio analysis was perceived to help the most in managing operational risk. This is probably due to the fact that financial statements and ratio analysis give direct indicators of the firm's performance, which in turn are used for risk measurement. The gross income figures, for example, are used to calculate the capital charge for operational risk (Basel, 2004) and the capital adequacy ratio (CAR) can be computed by dividing total capital by total risk-weighted assets. Financial statement

Table 6 Extent of MAP helping in managing operational risk

MAP	Min	Max	Mean	SD
1. Financial statement and Ratio Analysis	2	5	4.13	.844
2. Budgetary Control and Budgeting	2	5	4.04	.818
3. Business Planning	1	5	3.99	.819
4. Business Strategy	1	5	3.94	.860
5. Benchmarking	1	5	3.65	1.084
6. Productivity Analysis	1	5	3.63	1.124
7. Cost Control and Cost Management	1	5	3.61	1.021
8. Statistical Analysis	1	5	3.59	1.202
9. Relevant Costing and Decision Making Analysis	1	5	3.49	1.120
10. Cost Benefit Analysis	1	5	3.44	1.105
11. Balance Scorecard	1	5	3.35	1.172
12. Strategic Management Accounting	1	5	3.34	1.133
13. Quality Improvement Activities	1	5	3.28	1.124
14. Strategic Cost Management	1	5	3.21	1.153
15. Economic Value Added (EVA)	1	5	2.84	1.199
16. Activity Based Costing/Management	1	5	2.76	1.221
17. Standard Costing	1	5	2.67	1.248

information is used to measure operational risk. The income-based model and the expense-based[4] model for example, used financial statement information to measure operational risk.

The next three that were perceived to help the most were budgetary control and budgeting, business planning and business strategy. A possible explanation is that a well-organized budgeting process, and consistent follow-up of any operating variances to budget, can limit unexpected losses (Marshall, 2001). In addition, strategic and business planning is a qualitative business technique (such as Strengths, Weaknesses, Opportunities, and Threats (SWOT) analyses and scenario analysis) used to develop a long-term direction for the business to prevent any unexpected losses (Marshall, 2001).

Benchmarking, productivity analysis, cost control and cost management, statistical analysis, relevant costing and decision making analysis and cost benefit analysis were perceived to be moderately helpful in managing operational risk. Nevertheless, these practices provide relevant information for managers to make effective decisions. Effective decision-making is crucial for the long term survival of an organization. Balance scorecard (BSC), strategic management accounting, quality improvement programme and strategic cost management were also perceived to be moderately

[4] Income-based models analyze historical income or losses in terms of specific underlying risk factors. Expense-based models associate operational risk with fluctuations in historical expenses (Marshall, 2001)

useful in managing operational risk. Operational risk is a risk of losses resulting from inadequate or failed internal processes, people and systems or from external events (Basel, 2004). The BSC which has four perspectives which are learning and growth for employees, internal business processes, customer satisfaction and financial performance can be used to provide risk indicators (Beasley *et al*. 2006; Marshall, 2001). The risk indicators will be useful in analyzing the operational risk over time and thus focusing the operation manager's attention on problems before they get out of hand (Marshall, 2001). Quality programmes such as Total Quality Management (TQM) assumes that managers control process outputs through the careful selection of the inputs and that many loss events are the result of a poor-quality resource or process. Thus, TQM and other quality management programmes seem to help in managing operational risks by changing the risk profile of operational processes and resources. This is done by improving the availability, quality, relevance, flexibility, reliability, conformance, and sustainability of various process inputs and outputs (Marshall, 2001).

The lowest three practices that were perceived to help the least in managing operational risks were Economic Value Added (EVA), Activity Based Costing/ Management and Standard Costing. In fact, these three practices were also used the least by the sample firms. Traditionally, management accountants have always used standard costing in which predetermined costs of some activities are determined at the beginning of the period, and these costs are then compared with the actual costs at the end of the period to determine variances, known as accounting or operating variances (Marshall, 2001). These variances are in fact one measure of operational risk (Marshall, 2001). The fact that these practices were not widely used (as discussed in 4.1) also influences perception on the importance of these practices in managing operational risks. Looking closer at the mean ranking of this section it follows a similar trend to the extent that the MAPs were being used. Hence, the practices that were widely used were also perceived to help the most in managing operational risks.

5.0 CONCLUSION

The aim of this study was to investigate the management accounting and risk management practices in financial institutions. The study surveyed 72 financial institutions in Malaysia. Based on the IFAC's (1998) framework, the most widely practiced were the management accounting practices at stage 1, followed by practices of post 1995. As for the risk management practices, most of the firms have either implemented a complete or partial ERM framework. Financial institutions are more likely to adopt ERM due to the explicit calls by regulators to have more effective risk management system. The findings also indicate that management accounting practices that were extensively used were also perceived to help the most in managing operational risks. Management accounting expertise in identifying, analyzing and communicating management information for planning, control and performance

measurement and decision making can help develop techniques for communicating and embedding risk management across the whole organization.

In light of the findings of the study, there are two important implications that need to be addressed by top management of financial institutions. First, this finding suggests that despite the use of external, future and non-financial information in decision making, planning and control, the use of financial information is still prevalent. Second, the fact that some management accounting practices seem to help in managing risks, both management accounting and risk management must be the integral management tools that are complementing each other to form part of corporate performance management system for financial institutions. The Central Bank as the main regulator should promote best management practices such as management accounting systems and ERM among financial institutions as these practices will provide a competitive advantage as well as helping to comply with regulations. One way to promote these best practices among financial institutions is to extend the NAfMA's (Ibrahim Kamal *et al*. 2008; Suzana *et al*. 2005) award to the financial services category.

The study was subjected to three main limitations. First, this study was subjected to usual limitations associated with cross-sectional survey research, in which the information reflects only a practice at one point of time and information. As for the respondents, this study relied only on the top management as the sole respondents and representatives of their respective organizations. Second, this study covered only financial institutions in Malaysia, thus the findings cannot be generalized to other industries or other countries. Third, this study was descriptive in nature as it only provided the state-of-art of management accounting and risk management practices in financial institutions and the perception of the senior managers on whether management accounting practices help in managing operational risks. The limitations present opportunities for future research. The future research can study the relationship between MAP stage and level of ERM implementation. It may also investigate the complimentary effect of management accounting and risk management system on performance. Notwithstanding these potential limitations, this study had added to our limited understanding on the practices of management accounting and risk management in financial institutions.

REFERENCES

Abdel-Kader, M. & R. Luther. 2008. The Impact of Firm Characteristics on Management Accounting Practices: A UK-based Empirical Analysis. *The British Accounting Review*. 40: 2–27.

Andersen, T. J. 2008. The Performance Relationship of Effective Risk Management: Exploring the Firm-specific Investment Rationale. *Long Range Planning*. 41: 155–176.

Ballou, B., P. C. Brewer & D. L. Heitger. 2006. Integrating the Balance Scorecard and Enterprise Risk Management. *Internal Auditing*. 21(3): 34–38.

Banham, R. 2004. Enterprising Views of Risk Management. *Journal of Accountancy*. June: 65–71.

Bank Negara Malaysia. 2007. Deputy Governor's Opening Address at the Opening Ceremony of the 10th ASEAN Insurance Regulators Meeting and 33rd ASEAN Insurance Council Meeting. Retrieved April 22, 2008. http://www.bnm.gov.my.

Bank Negara Malaysia. 2004. Insurance Annual Report. Retrieved April 22, 2008. http://www.bnm.gov.my.

Bardia, S. C. 2008. Evaluation of Financial Performance: A Dialectics. *ICFAI Journal of Accounting Research*. 7(1): 36–49.

Basel Committee on Banking Supervision. 2004. *International Convergence of Capital Measurement and Capital Standards: A Revised Framework*. Basel, Switzerland.

Beasley, M., A. Chen, K. Nunez, L. Wright. 2006. Working Hand in Hand: Balance Scorecards and Enterprise Risk Management. *Strategic Finance*. March: 49–55.

Beasley, M. S., R. Clune. & D. R. Hermanson. 2005. Enterprise Risk Management: An Empirical Analysis of Factors Associated with the Extent of Implementation. *Journal of Accounting and Public Policy*. 24: 521–531.

Bessis, J. 2002. *Risk Management in Banking*. Chicester: John Wiley & Sons.

Bhimani, A. & K. Langfield-Smith. 2007. Structure, Formality and the Importance of Financial and Non-financial Information in Strategy Development and Implementation. *Management Accounting Research*. 18: 3–31.

Billings, M. & F. Capie. 2004. The Development of Management Accounting in UK Clearing Banks, 1920-70. *Accounting, Business and Financial History*. 14(3): 317–338.

Bouwens, J. and M. A. Abernethy. 2000. The Consequences of Customization on Management Accounting System Design. *Accounting, Organizations and Society*. 25(3): 221–241.

Bowling, D., F. Julien and L. Rieger. 2003. Taking the Enterprise Risk-Management Journey. *Bank Accounting & Finance*. 16–22.

Bowling, D. M. & L. Rieger. 2005. Success Factors for Implementing Enterprise Risk Management. *Bank Accounting & Finance*. April-May: 21–26.

Casualty Actuarial Society Enterprise Risk Management Committee (CAS). 2003. *Overview of Enterprise Risk Management*.

Chenhall, R. H. & K. Langfield-Smith. 1998. Adoption and Benefits of Management Accounting Practice: An Australian Study. *Management Accounting Research* 9(1): 1–19.

Cobb, I., C. Helliar & J. Innes. 1995. Management Accounting Change in a Bank. *Management Accounting Research*. 6: 155–175.

Cole, L. P. 1988. *Management Accounting in Banks*. Bank Administration Institute, Illinois: Rolling Meadows.

Collier, P. M., A. J. Berry & G. Burke. 2004. Risk and Control: Drivers, Practices and Consequences. *Chartered Institute of Management Accountant*.

Collier, P. M., A. J. Berry & G. Burke. 2007. *Risk and Management Accounting: Best Practice Guidelines for Enterprise-wide Internal Control Procedures*. Oxford: CIMA Publishing.

El-Hawary, D., W. Grais & Z. Iqbal. 2007. Diversity in the Regulation of Islamic Financial Institutions. *The Quarterly Review of Economics and Finance*. 46(5): 778–800.

Hakenes, H. 2004. Banks as Delegated Risk Managers. *Journal of Banking and Finance*. 28: 2399–2426.

Helliar, C., I. Cobb & J. Innes. 2002. A Longitudinal Case Study of Profitability Reporting in a Bank. *British Accounting Review*. 34: 27–53.

Hussain, M. M. 2000. *Management Accounting Systems in Services: Empirical Evidence with Non-Financial Performance Measurement in Finnish, Swedish and Japanese Banks and other Financial Institutions*. Universitas Wasaensis, Vaasa.

Ibrahim Kamal Abdul Rahman, S.C. Li Fah, Suzana Sulaiman & Normah Omar. 2008. Paper presented at the 9th Annual Conference of the Asian Academic Accounting Association, Dubai, United Arab Emirates.

Innes, J. and FMitchell. 1995. ABC: A Follow Up Survey of CIMA Members. *Management Accounting*. October: 50–51.

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

International Federation of Accountants (IFAC). 1998. International Management Accounting Practice Statement (IMAP # 1): Management Accounting Concepts, *Financial and Management Accounting Committee March 1998*. 84–100.

Kafafian, R. E. 2001. Keys to Community Bank Success: Utilizing Management Iinformation to Make Informed Decision. *The Journal of Bank Cost & Management Accounting*. 14(1): 3–4.

Kaplan, R. S. & A. A. Atkinson. 1998. *Advanced Management Accounting*. 3rd ed. USA: Prentice Hall.

Kleffner, A. E., R.B. Lee & B. Mcgannon. 2003. The Effect of Corporate Governance on the Use of Enterprise Risk Management: Evidence from Canada. *Risk Management and Insurance Review*. 6(1): 53–73.

Kyriazis, D. & C. Anastassis. 2007. The Validity of the Economic Value Added Approach: An Empirical Application. *European Financial Management*. 13(1): 71–100.

Liebenberg, A. P. & R. E. Hoyt. 2003. The Determinants of Enterprise Risk Management: Evidence from the Appointment of Chief Risk Officers. *Risk Management and Insurance Review*. 6(1): 37–52.

Llewellyn, D. 1999. The Economic Rationale for Financial Regulation. *Financial Services Authority Occasional Papers in Financial Regulation*. UK.

Marshall, C. L. 2001. *Measuring and Managing Operational Risks in Financial Institutions*. Singapore: John Wiley & Sons (Asia) Pte Ltd.

McWhorter, L. B., M. Matherly and D. M. Frizzell. 2006. The Connection Between Performance Measurement and Risk Management. *Strategic Finance*. February: 51–55.

Mikes, A. 2006. Interactive Control Use as a Political and Institutional Phenomenon – The Case of Divisional Control in a Financial Services Organization. Retrieved May 29, 2007. http://www.ssrn.com/

Obaidullah, M. 2005. *Islamic Financial Services*. King Abdulaziz University, Jeddah, Saudi Arabia: Scientific Publishing Center.

Otley, D. T. 2001. Extending the Boundaries of Management Accounting Research: Developing Systems for Performance Management. *British Accounting Review.* 33: 243–261.

Pallant, J. 2005. *SPSS Survival Manual.* 2nd Ed. Illinois: Open University Press.

Platt, G. 2004. Beyond Compliance: When Risk Management Becomes a Competitive Advantage. *Global Finance*. September: 22–24.

Rezaee, Z. 2005. The Relevance of Managerial Accounting Concepts in Banking Industry. *Journal of Performance Management*. 18(2): 3–16.

Rodeghier, M. 1996. *Survey with Confidence: A Practical Guide to Survey Research Using SPSS*. Chicago: SPSS Inc

Scholey, C. 2006. Risk and the Balance Score Card. *CMA Management*. June/July: 32–35.

See-Yan, L. 2000. Malaysia's Response to the Present Global Economic Disorder in Nik Hassan, N.M and Musa, M. (Eds). *The Economic and Financial Imperatives of Globalisation: An Islamic Response*. Kuala Lumpur: IKIM.

Sekaran, U. 2000. *Research Methods for Business: A Skill Building Approach*. 3rd ed. New York: John Wiley & Sons.

Soin, K. 2005. Risk, Regulation and the Role of Management Accounting and Control in UK Financial Services. Paper presented at Critical Perspectives in Accounting Conference, New York.

Suzana Sulaiman, Normah Omar & Ibrahim Kamal Abdul Rahman. 2005. NAfMA as Value Creation Tool: Malaysian scenario. *Malaysian Accounting Review*. 4(1): 117–131.

Upchurch, A. 2002. *Cost Accounting Principles and Practice*. Great Britain: Prentice Hall.

Williamson, D. 2004. A Call for Management Accounting Control Research into Risk Management. Paper presented at MARG Conference, Aston Business School, Aston.

Yudistira, D. 2004. Efficiency in Islamic Banking: An Empirical Analysis of Eighteen Banks. *Islamic Economics Studies*. 12(1).