

Review of the Literature on Enterprise Risk Management

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Abstract

The aim of this paper is to review previous studies on Enterprise Risk Management (ERM). Previous studies show that empirical works on ERM are still limited. Research using both primary and secondary data will be discussed. From the previous studies, it was found that most of the studies in Malaysia on risk management or ERM used primary data. The scopes of the previous studies in Malaysia include construction, financial institutions, service sector, technology, industrial products, consumer products, plantation and trade and services, and these studies used mail questionnaires and interviews. While studies from the secondary data focus on industrial product companies, of which data are gathered from their annual reports.

Key words: Literature Review, Enterprise Risk Management, Primary Data, Secondary Data



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INTRODUCTION

The word enterprise for Enterprise Risk Management (ERM) itself shows a different meaning than Traditional Risk Management (TRM). Enterprise means to integrate or aggregate all types of risks; using integrated tools and techniques to mitigate the risks and to communicate across business lines or level compared to Traditional Risk Management. Integration refers to both combination of modifying the firm's operations, adjusting its capital structure and employing targeted financial instruments (Meulbroek, 2002).

It was argued that the term ERM has quite similar meaning with Enterprise-Wide Risk Management (EWRM), Holistic Risk Management (HRM), Corporate Risk Management (CRM), Business Risk Management (BRM), Integrated Risk Management (IRM) and Strategic Risk Management (SRM) (D'Arcy, 2001; Liebenberg and Hoyt, 2003; Kleffner et al., 2003; Hoyt and Liebenberg, 2006; Manab et al., 2007; and Yazid et al., 2009).

There are various definitions of ERM. For example, in the middle of 2004, the Committee of Sponsoring Organization of the Treadway Commission (COSO) released the Enterprise Risk Management Integrated Framework. COSO defines Enterprise Risk Management as a process, affected by an entity's board of directors, management and other personnel, applied in strategy-setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.

CAS or Casualty Actuarial Society (2003) defines Enterprise Risk Management as disciplines by which an organization in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purposes of increasing the organization's short- and long-term value to its stakeholders.

Lam (2000) on the other hand, defines Enterprise Risk Management as an integrated framework for managing credit risk, market risk, operational risk, economic capital, and risk transfer in order to maximize firm value. Makomaski (2008) defines Enterprise Risk Management as a decision-making discipline that addresses variation in company goals.

Alviunessen and Jankensgård (2009) point out that Enterprise Risk Management is concerned about a holistic, company-wide approach in managing risks, and centralized the information according to the risk exposures. They use the term "Risk Universe", which is the risk that might impact on the future cash flow, profitability and continued existence of a company. In other words, risk universe is risk that could affect the entity of the company. If risk universe can be identified, the next step is to take an appropriate action such as risk mapping process, accessing the likelihood and impact and curb the risk based on the organizations' objective.

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Therefore, Enterprise Risk Management can be defined as a systematically integrated and discipline approach in managing risks within organizations to ensure firms achieves their objective which is to maximize and create value for their stakeholders.

There are two key points that must be highlighted according to the definitions given above. The first key point is the main role of ERM itself - it integrates and coordinates all types of risks across the entire organization. It means that risks cannot be managed in silo approach. All risks occurred in the entity must be combined and managed in enterprise approach. The second key point is by using ERM, users are able to identify any potential incidents that may affect the organization and know their risk-appetite. If the risk-appetite is specifically known, any decision made by the organization to curb risks may be parallel with the firm's objective (Walker et al., 2003).

DEVELOPMENT ON ENTERPRISE RISK MANAGEMENT

This section will discuss briefly the development of ERM especially on the emerging factors that influence companies to shift from risk management practices (Traditional Risk Management) to Enterprise Risk Management. The discussions will focus from the theoretical perspectives; academic and professional bodies.

D'Arcy (2001) has postulated that the origin of risk management was developed by group of innovative insurance professors i.e. Robert I. Mehr and Bob Hedges in 1950s. In the 1963s, the first risk management text entitled "Risk Management and the Business Enterprise" was published. The objective of risk management at that time was to maximize the productive efficiency of the enterprise. At that time, risk management was specifically focused on pure risks and speculative risks.

In the 1970s, when Organization of Petroleum Exporting Countries (OPEC) decided to reduce production in order to increase the price, financial risk management became an interesting issue highlighted by firms because the increment in oil price has affected the instability in exchange rates and inflation rate (D'Arcy, 2001; Skipper and Kwon, 2007).

Later in 1980s, political risks attracted more attention from multinational corporations as a result of different political regimes in different countries. For example, when the government announced a new policy, investors and corporations must make decision to reduce risk (Skipper and Kwon, 2007). According to D'Arcy (2001), during this era, organizations did not properly apply risk management because they did not apply the risk management tools and technique such as options. Therefore, it had increased the cost of operations of the organizations. During this era, the silo mentality still remains (Skipper and Kwon, 2007).

In the 1990s, the use of financial tools such as forwards and futures are widely practiced in the United States. In addition, pressure from shareholders and stakeholders to take more action rather than buying insurance to fight against uncertain loss or financial crisis, influenced managers to mitigate risks more proactively. It demanded managers to retrieve better risk information and risk management techniques. During this time, risk management was closely related to financial, operational and strategic risks, not only hazard risks (Skipper and Kwon, 2007). Hazard risk refers to any source that may cause harm or adverse effects such as equipment lose due to natural disasters for example, the Hurricane Katrina that happened in United States in 2005.

There are various risks that can occur. These include financial risk, strategic risk and operational risk. Financial risk refers to any loss due to economic conditions such as foreign exchange rates, derivatives, liquidity risks and credit risks. Apart from the corporate scandals in Enron, WorldCom, Polly Peck and Parmalat, the last decade showed how serious the financial scandal was to corporations and banks (Jones, 2006; Benston et al., 2003). Another example was in 1994, the Orange County's Investment Pool lost USD1.7 billion from structured notes and leveraged repo positions, while in 1995, Barings Bank and Daiwa Bank lost USD1.5 billion and USD1.1 billion respectively due to losses in futures and options trading and unauthorized derivatives trading. The same financial disaster occurred in 1996 when Sumitomo Corp. lost USD1.8 billion as a result of the actions of its head copper trader, Yasuo Hamanaka who secreted his activities in unauthorized copper trading on the London Metal Exchange (Holton, 1996; D'Arcy, 2001).

Li and Liu (2002) define strategic risk as the uncertainty of loss of a whole organization and the loss may be profit or non-profit, while Mango (2007) points out that there is no specific definition of strategic risk due to the inability to well-define and understand it. Strategic risk may arise from regulatory, political impediments or technological innovation. For example a specific guide entitled "Risk Management Principles for Electronic Banking" was produced to ensure banks follow the 14 guidelines in providing internet banking services like electronic fund transfers as proposed (The Basel Committee, 2001). The Basel Committee (2001) define operational risk as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk is more related to internal problems, such as employee fraud, corporate leadership, segregation of duties, information risk and product flaws. For example, Marc Dreier was found guilty and charged for 20 years of imprisonment due to fraud of fictitious promissory notes, which is valued at approximately USD700 million (Weiser, 2009).

As the results that risks might occur in multiple perspectives, it can be concluded that risk management (Traditional Risk Management) could not be managed separately. It has to be integrated in a holistic manner. These factors are among the main cause of the emergence of Enterprise Risk Management in late 1990s. Organizations face risks and the risks depend on many factors. For example operational risk, strategic risk, political risk, technology risk, legal risk, financial risk, reputational risk and human capital risk. Most of the literature mainly concern on four types of risk i.e. financial risk, hazard risk, operational risk and strategic risk (D' Arcy, 2001; CAS, 2003; Cassidy, 2005). Cassidy (2005) found that Enterprise Risk Management existed in planning, organizing, leading and controlling organizations activities in order to minimize firms' major risks such as financial, strategic and operational risks.

The professional bodies such as Casualty Actuarial Society (CAS, 2003) have reported six factors that force organization to practice Enterprise Risk Management. The first factor is related to complicated risks. Organization not only faced four basic types of risks such as hazard, financial, operational and strategic risk, but there were other risks such as the risks in advance technology, the accelerating pace of business, globalization, increasing financial sophistication and the uncertainty of irrational terrorist activity. These risks did not occur by themselves. It might be happened because of the combination of both types of risks (for example combination of globalization factors and advance in technology). The second factor came from external pressures such as regulators, rating agencies, stock exchanges, institutional investors and corporate governance bodies. The Australia/New Zealand Risk Management standard released in 1995 was an example of a formalized system of risk management and report the organization's management pertaining to the performance of the risk management system. The third factor is related to a sense of "portfolio point of view" which refers to an increasing tendency towards integrating the risks, which previously have been managed in silo. The fourth factor is that risk need to be quantified even if it is impossible to quantify all risks. By quantifying risks, management will be able to estimate the magnitude of risk or degree of dependency with other risks efficiently in making decision process. The fifth factor is the Boundary-less Benchmarking factor. The implementation of risk management now is not only limited to the insurance or financial services, but is now common to other organizations. In addition, rapid changes in technology allow related information on risks to be transferable easily across the organizations. The final factor is related to risk can be treated as opportunity. Previously, any risk that arises has been treated in defensive approach - to be minimized or avoided. Now, risk must be understood as the value-creating potential of risk. As a result of past experience in mitigating risk, organizations may develop expertise in managing those risks and may be able to transfer their expertise to other organizations.

Lam (2000) as cited in Wolf (2008), have stressed that risks may arise from multiple perceptions in daily business operations. For example, Mercer Management Consulting showed that most Fortune 1000 companies suffered declining in stock due to failure in decisions in terms of strategic (58 percent), operational (31 percent) and financial (6 percent). Therefore, firms need to integrate all risks in their daily operations, in order to mitigate any probabilities on risks in the systematic manner. In addition, by using Enterprise Risk Management, it helps firms to manage better financial results (Jablonowski, 2006).

As argued by Lam (2000), practicing Enterprise Risk Management should be observed upon three perspectives: globalization; changes in the role of risk managers; and regulatory. From the globalization perspective, it created multiple risks perceptions, fast growing technologies and “interdependency of risks”. From the role of risk manager, risks should not be treated as a trouble, but also as an opportunity. Finally from the regulatory oversight factors perspective, appointing Chief Risk Officer (CRO) and the establishing Risk Management Committee (RMC), the adoption of ERM will become a reality.

ERM is important in many perspectives. There are four main reasons why US companies exercise ERM (KPMG International, 2006). These are:

- (i) the organization desire to reduce potential financial losses (68 percent);
- (ii) the organization desire to improve business performance (64 percent);
- (iii) due to the regulatory compliance requirements (58 percent); and
- (iv) the organization desire to increase risk accountability (53 percent).

On the other hand, (PricewaterhouseCoopers, 2008) found that firms in Finland are motivated to implement ERM because of the following reasons:

- (i) over 96 percent of the users want to adopt good business practice;
- (ii) more than 81 percent due to corporate governance pressure;
- (iii) 42 percent stated it gives them a competitive advantage; and
- (iv) more than 30 percent comes from regulatory pressure and also investment community pressure.

RESEARCH USING PRIMARY DATA

Studies by Kleffner et al., (2003) could be considered as among the pioneer on Enterprise Risk Management. Their study specifically focussed on public listed companies in Canada in 2001, using survey for 336 respondents, who were primarily in charge of risk management in the respecting company. From 336 companies, 118 companies or 35 percent responded to the survey. There were 23 questions for the targeted company to answer. Four major areas of interest were used to obtain information, as follows:

- (i) company-specific information including firm size, industry and information about risk manager,
- (ii) organization of the risk management function within the firm, responsibilities of the risk manager, and whether there was a CRO,
- (iii) current and past use of risk financing alternatives for both operational and non-operational risks; and
- (iv) current or expected use of Enterprise Risk Management and factors that affected the adoption of it, including corporate governance.

The study found that, out of 118 companies, 31 percent or 37 companies adopted ERM, 29 percent or 34 companies were investigating to adopt ERM, and 40 percent or 47 companies were not practicing ERM. The study also found the existence of 13 Chief Risk Officers (CRO) in 37 companies which adopted ERM. In addition, the study also found factors that influenced companies to adopt ERM: influence of the risk manager (61 percent); encouragement from the board of directors (51 percent); concern for directors’ and officers’ liability (28 percent); and compliance with Toronto Stock Exchange (TSE) guidelines (37 percent).

A study by Yusuwan et al., (2008) focussed on the risk management practices on construction project companies specifically in Klang Valley, Malaysia. The study was undertaken to identify the level of awareness of risk management, to examine the policy undertaken when dealing with risks in a construction project, and to identify the problems and challenges for the implementation of risk management. The study employed questionnaire survey and interviews. Their respondents were 27 companies from public and private sectors that are operated in Klang Valley. The study found that in terms of level of awareness and perception of risk management, 44.4 percent had heard occasionally, 29.6 percent had heard and attended training, 14.8 percent had practised risk management and 11.1 percent has never heard about risk management at all. 51.9 percent of the respondents believed that risk management could add value to daily work, 33.3 percent believed that risk management was useful in

time of crises even it only benefits the organization. Only 14.8 percent of the respondents have practiced risk management on their job. From this study, we can conclude that risk management affects productivity, performance, quality and project budget and that risk management is suitable to apply for project with certain characteristics such as new technology and is suitable to company during unstable political conditions.

Rasid and Rahman (2009) investigated management accounting and risk management practices in financial institutions in Malaysia using mail surveys. These were sent to 106 financial institutions listed under Malaysian Central Bank, consisting of commercial banks, Islamic banks, merchant/investment banks, discount houses, development financial institutions and insurance companies. The questionnaires were mailed to the Chief Financial Officer or the most senior position in the finance department. Of this, 76 respondents or 68 percent responded. The study employed eight variables consisting of job designation, length of time holding current position, types of services, number of employees, annual revenue, annual total assets, firm's age, and ownership structure. The study found that size was not related to the extent of ERM development and concluded that financial institutions tend to adopt ERM because of the requirements set by regulators.

A research done by Manab et al., (2010) focused on the drivers and the success of Enterprise Wide Risk Management (EWRM) implementation with corporate governance compliance and value creation in for profit companies in Malaysia. The study selected 132 listed companies in the service sector and only 85 companies agreed to participate. The study chose two types of company, namely financial companies and non-financial companies. 11 EWRM drivers were employed in the study: corporate governance; mandate from BOD; shareholder value; technology; improved decision making; improved communication; globalization; competitive pressure; stakeholder pressure; good business practice; and catastrophic event. The study found five main drivers which contribute to the success of EWRM for financial and non-financial companies. These were corporate governance, mandate from BOD, shareholder value, improved decision making and good business practices.

Daud et al., (2010) investigated the relationship between quality of Chief Risk Officer (CRO) and Enterprise Risk Management (ERM) in Malaysia. The study focussed on the level of Enterprise Risk Management adoption within Malaysian companies and the quality of Chief Risk Officer in implementation of Enterprise Risk Management. The questionnaires were sent to 500 companies through main from seven types of industry such as Technology, Industrial Product, Property, Consumer Product, Plantation, Trade and Services and Construction. Among these, only 89 respondents participated in the study. The study focussed on four levels of adoption of Enterprise Risk Management: complete ERM in place; partial ERM in place; planning to implement in ERM; and (d) investigating to adopt ERM. The results of the study showed that only 43 percent of various companies have complete ERM program while 57 percent were considered as partial. The study also found that the quality of CRO and ERM were significant indicating that CRO is an important factor for companies to adopt ERM.

RESEARCH USING SECONDARY DATA

Liebenberg and Hoyt (2003) are considered as pioneer in the study of ERM using secondary data. Their study focussed on the determining factors that influenced companies to practice Enterprise Risk Management. The main purpose of their study was specifically directed to the existence of Chief Risk Officer in implementing Enterprise Risk Management. Other important driving factors that forced the implementation of ERM were also discussed in their study. The study identified two major factors, internal factors such as maximization of shareholders wealth and external factors such as globalization, corporate governance and technological progress. Six hypotheses were formulated for this study:

- H1: firms with greater earnings and stock price volatility are more likely to appoint CRO.
- H2: firms that are more highly leveraged are more likely to appoint a CRO.
- H3: firms with greater growth opportunities are more likely to appoint a CRO.
- H4: firms that are more financially opaque are more likely to appoint a CRO.
- H5: firms with a higher percentage of institutional shareholdership are more likely to appoint a CRO.

H6: firms that have subsidiaries in the United Kingdom or Canada are more likely to appoint a CRO.

Eight independent variables were employed in their study: average size; financial services dummy; earnings volatility; stock price volatility; average leverage; average market-to-book ratio; average percentage of institutional ownership; and U.K./Canadian subsidiary dummy. The final sample consisted of 26 U.S. firms which were gathered from Lexis-Nexis, Dow Jones and PR Newswire. Logit regression approach is employed in the study since the independent variable was a dummy variable. The results of their study showed the importance to appoint CRO in order to reduce asymmetry information, and the most important was the role of CRO in implementing and managing the ERM program. The results also indicated that firms with greater financial leverage were more likely to appoint a CRO and size was also found to be significant to ERM.

In another study, Hoyt and Liebenberg (2006), examined the determinants of Enterprise Risk Management for 275 United States insurance companies for the period 1995 to 2004. This study aimed to determine factors for insurance companies to practice Enterprise Risk Management and to estimate the relationship between Enterprise Risk Management and firm value. The study found that out of 275 companies, 166 firms are usable for analysis. The study used CRSP/COMPSTAT as a primary database, followed by Factiva, Thompson, financial reports, newswires, and other media for evidence of Enterprise Risk Management activities. Using Probit regression, the study employed five independent variables: size; percentage of institutional ownership; international diversification dummy; industrial diversification dummy; and life insurance dummy. Enterprise Risk Management noted as dummy 1 = user, 0 = else was the independent variables. The results of the study indicated that size, institutional ownership and international diversification were significant in determining ERM adoption.

Pagach and Warr (2007) examined the factors that influenced firm to adopt Enterprise Risk Management. This study was quite similar with Hoyt and Liebenberg (2006) but they improved in terms of methodology used in the study. The study had larger sample of ERM adopters, more variables and different model used to test the data. The study employed data from 1992 to 2004 for all firms listed in COMPUSTAT. Their focuses were banks and utilities companies. To capture for firms that appoint Chief Risk Officer (CRO), the study used business library of LEXIS-NEXIS. The variables were grouped into four categories. Firstly, financial characteristics consisted of leverage, cash ratio, earnings volatility and size. Secondly, asset characteristics consisted of capacity and growth options. Thirdly, market characteristics consisted of standard deviation of the firm's daily returns over the year (SDRET) prior to the hiring of the CRO. Fourthly, managerial incentives consisted of Vega and Delta ratio as a proxy of the CEO's risk taking incentives. The study also used number of operating segment of the firm, institutional ownership, institutional investors and firm size as control variables. For the model, the study used hazard model (Cox Proportional Hazard Model) which was commonly used in medical research. The results of their study indicated that increased in leverage at 10 percent will increase 7.8 percent for companies to hire CRO. In addition, the study found that 10 percent increased in size will increase 27 percent for companies to hire CRO, increased in 10 percent of earnings will result in 4.7 percent likelihood companies to hire CRO.

Hoyt and Liebenberg (2008) extended their study done in 2006 by improving the previous model i.e. Probit regression to maximum-likelihood treatment effect to estimate the determinants of company that practiced Enterprise Risk Management (ERM). The study also extended the time period, from 1995 to 2005 (previously up to 2004). Specifically, the study only concentrated in 2000 to 2005, in terms of ERM activity. The sample of the study consisted of 275 insurance which were gathered from CRSP/COMPUSTAT database. To ensure the activity of ERM for firms was valid, detailed search from financial reports, newswires, Factiva, Thompson were used. Eight independent variables were employed as function of ERM (ERM = 1, as a dummy variable for companies that involved in ERM). These variables consist of institutional ownership, size), industrial diversification dummy, international diversification dummy, life insurance dummy, leverage, intra-industry diversification and reinsurance used. In terms of number of firms with ERM activity, there were 24 companies or 19.2 percent out of 125 companies engaged in ERM. Furthermore, for an appointment of CRO, out of 125 companies, the study found that 15 companies had CRO, where 8 of these companies announced the appointment of CRO.

The results of the determinants of ERM found that larger firms were more likely to engage in ERM than smaller firms. This was supported by pressure from institutional owners (institutional ownership) for companies to engage in ERM. Other independent variables i.e. leverage and reinsurance were negatively and significantly related to ERM.

Yazid et al. (2008) focused on a cross-sectional study on foreign exchange risk management by Malaysian manufacturers. These companies were selected because they were involved in export and import activities. From 152 companies, 100 companies were randomly selected. The data was gathered from annual report for 2005. This study mainly focused on foreign exchange risk management (FERM). The results of the study found that 45 percent of the companies were considered as a User (FERM) and 55 percent as a Non-User. The study also found two factors which influenced companies to involve in risk management, i.e. assets and employees. Furthermore, from the study it was found that 18 percent of users of risk management have adopted ERM framework in their strategic business operation.

CONCLUSION

This paper discusses the definitions of ERM and its development over the years. In addition, previous studies that are related to the determinants of companies that practiced Enterprise Risk Management (ERM) are also discussed.

The paper starts with the definition of ERM and its development. The fact that risks might occur in multiple perspectives, it appears that risk management (Traditional Risk Management) could not be managed as a separate approach. It needs to be integrated in a holistic manner. These factors were among the main cause of the emergence of ERM in late 1990s and could be argued as factors for companies to adopt or practice ERM.

Evidence also showed that studies on ERM are based on two approaches, using primary data such as interviews and mail questionnaire; and using secondary data. From the previous study it was found that most of the studies in Malaysia on risk management or ERM used primary data. The scopes of the previous studies in Malaysia were construction, financial institutions, service sector, technology, industrial products, consumer products, plantation and trade and services, and these studies used mail questionnaire and interviews. While from the secondary data study, the focus was only on industrial product, of which data was gathered from annual reports.

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