Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 164 (2014) 541 – 547

Procedia
Social and Behavioral Sciences

International Conference on Accounting Studies 2014, ICAS 2014, 18-19 August 2014, Kuala Lumpur, Malaysia

Enterprise risk management (ERM) implementation: Some empirical evidence from large Australian companies

Saudah Ahmad[a]*, Chew Ng[b], Lisa Ann McManus[c]

[a]*School of Accountancy, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia*
[b]*Department of Accounting, Finance and Economics, Griffith University, Queensland 4111, Australia*
[c]*School of Business, Charles Darwin University, Northern Territory 0909, Australia*

Abstract

According to Economist Intelligence Unit (Economist Intelligence Unit Limited and SAS, 2008), risk management failure is one of the major triggers of the recent global financial crisis. Enterprise risk management (ERM), an organisation wide process which identifies potential adverse events and provides strategies to manage risks, has been suggested as an approach to combat the volume and complexities of the risks faced by today's organisations (see, for example, Beasley *et al.* 2009). Despite of the recent emphasis given to risk management by the Australian Securities Exchange (ASX), there is scant empirical evidence on ERM implementation among the Australian listed companies. This study aims to provide some evidence on the extent of ERM implementation among the Top 300 companies listed on ASX. Questionnaires were used to collect data for this study. The outcomes of the study show that the majority of the firms involved in the survey not only extensively implement ERM but also extensively embed ERM into their corporate strategic processes. Further, they have also implemented the system for more than five years. Potential limitation of these findings are acknowledged.

Peer-review under responsibility of the School of Accountancy, College of Business, Universiti Utara Malaysia.

Keywords: Enterprise Risk Management (ERM); ERM implementation; corporate governance; Chief Risk Officer (CRO)

* Corresponding author. Tel.:+ 6-04-928 7323; fax: +6-04-928 7216.
E-mail address: saudah@uum.edu.my

Peer-review under responsibility of the School of Accountancy, College of Business, Universiti Utara Malaysia.
doi:10.1016/j.sbspro.2014.11.144

1. Introduction

In 1995, Australia and New Zealand produced the first edition of AS/NZS 4630 which is the world's first risk management standard (Moeller, 2007). The latest version of the standard (Standards Australia/Standards New Zealand, 2004) had been embraced and updated as the world's risk management standard – the ISO 31000 (Standards Australia/Standards New Zealand, 2009). ERM implementation is congruent with investors and other stakeholders' demands for better corporate governance following the collapsed of many large Australian companies, including OneTel and HIH (Carlon, Loftus, & Miller, 2003; Kang, Cheng, & Gray, 2007).

However, knowledge is scant about ERM implementation in Australia despite the emphasis given to risk management and its related disclosure. Most previous studies on ERM have been conducted in other parts of the world, mainly in the US (Liebenberg & Hoyt, 2003; Stroh, 2005; Desender, 2007; Beasley, Pagach, & Warr, 2008b; Pagach & Warr, 2008) and Canada (Harrington, Niehaus, & Risko, 2002; Kleffner, Lee, & McGannon, 2003; Aabo, Fraser, & Simkins, 2005). To date, little is known about ERM implementation among Australian firms. A recent review of ERM literature confirms the non-existence Australian studies on ERM (bt Isa, 2014). However, a number research studies show that Australian firms are implementing ERM (Subramaniam, McManus, & Zhang, 2009; Zwaan, Stewart, & Subramaniam, 2011; Subramaniam, Wahyuni, Cooper, Leung, & Wines, 2014). Thus, it is timely to have a study that specifically focuses on examining the extent of ERM implementation among Australian companies. This study aims to shed light on ERM implementation among Top 300 Australian listed companies.

This study is motivated by the agency theory (Jensen & Meckling, 1976; Eisenhardt, 1989; Culpan & Trussel, 2005) and signalling theory (Spence, 1973; Certo, Daily, & Dalton, 2001; Watson, Shrives, & Marston, 2002) that shares a central tenet which is the information asymmetry problem between management and shareholders. From the perspectives of these theories, managers have the proprietary information about their firm that is not accessible to shareholders. Thus, the information asymmetry problem increases agency costs between management and stakeholders, leading to signalling efforts potentially through the ERM implementation by the board in order to reduce the information asymmetry problem.

2. ERM implementation

Worldwide, there are over 80 risk management frameworks (Olson & Wu, 2008). Accordingly, there are different versions of enterprise-wide risk management or ERM definition. Nevertheless, the most common ERM frameworks are the Australian and New Zealand's risk management standard named AS/NZS 4360 and the Committee of Sponsoring Organizations of the Treadway Commission's (COSO) "*Enterprise Risk Management – Integrated Framework*" (Moeller, 2007; Olson & Wu, 2008; Robinson, 2008). A review of the relevant literature reveals that practitioners (Hill, 2008) and scholars (Moeller, 2007; Brown, Steen, & Foreman, 2009; Subramaniam *et al.*, 2009) consider that these two risk frameworks are similar despite their semantically different definitions. Hill (2008) sums up the two frameworks as follows " *In practical terms the principles of define, identify, analyse, treat, report and monitor risk are fundamentally the same even though the number of steps and terminology may change*."

Consistent with existing literature, this study adopts an operational definition of ERM, a holistic risk management process that is fully integrated and embedded in the strategic planning and the management's decision-making processes of an organisation at all levels, be it at the enterprise, function or business unit level. This operational definition is congruent with AS/NZS 4360 (2004).

ERM implementation enables management to identify, manage and respond to risks effectively (Beasley, Branson, & Hancock, 2008a). As risks cannot be eliminated, firms may implement ERM as a strategic planning tool to identify, manage and respond to risks effectively (Beasley *et al.*, 2008a; Francis & Paladino, 2008), to better understand their key material business risks (Moeller, 2007) while establishing a strong risk management culture across the entire organisation (Hanssen, 2005). Consistent with Beasley, Chen, Nunez, and Wright (2006) and Francis and Paladino (2008), the implementation is considered complete or full when ERM is embedded into corporate strategic planning and decision making processes. The authors found that firms with formal treatment of

ERM embedded ERM up to 40% in their corporate strategic process. In addition, the extent of ERM implementation varies among firms (Beasley, Clune, & Hermanson, 2005; Beasley, Branson, & Hancock, 2009).

Previous studies indicate consistent trend of Chief Risk Officers (CRO) appointment within firms that implement ERM (Kleffner *et al.*, 2003; Liebenberg & Hoyt, 2003; Beasley *et al.*, 2008b) while several of the studies used the existent of a CRO as proxy to ERM implementation (Liebenberg & Hoyt, 2003; Beasley *et al.*, 2008b; Pagach & Warr, 2008). Thus, it is timely to fill out the literature gap by providing some empirical evidence of ERM implementation among the Top 300 Australian listed companies.

3. Methods

Survey questionnaires were used to collect data for this study. The sample firms were 297 firms listed as The 2009 Top 300 Australian obtained from Standard and Poor's (S&P) rating services. Larger Australian firms have been found to be more responsive to the Australian Securities Exchange's (ASX) recommended governance structures (Chalmers, 2001; da Silva Rosa, Izan, & Lin, 2004). The year 2009 was chosen as the revised ASX Corporate Governance Principles and Recommendations (CGPR), which appears to encourage ERM implementation, was made effective from 1st January 2008. Thus, it is argued that the top 300 Australian listed companies are more likely to implement ERM.

The survey was distributed to the sample firms with annotation that it is targeted to CROs or individuals in charge of the risk management function. The questionnaires were used to capture data about the firms' ERM implementation stage, ERM implementation demographics and the respondents' background. The collected data was analysed using the SPSS software.

4. Results and discussion

There were 66 responses received† with six incomplete responses that were deleted; resulting with 60 usable responses accounting for 20.2% response rate.

4.1. Descriptive statistics

The industry membership of the 60 participating Top 300 ASX companies is presented in Table 1. Of these respondents, thirteen companies (or approximately 21.6%) were from Materials industry; seven (or 11.6%) from Capital Goods industry; six companies (10%) belonged to the Energy industry; four (6.7%) were from the Commercial and Professional Services, Food, Beverage and Tobacco, and Health Care Equipment and Services industries respectively; three (5%) from Transportation, Banks, Diversified Financials, Insurance, and Real Estate industries; another two companies each (3.3%) were from Food and Staples Retailing, and Utilities industries; while one company each (1.7%) came from the Consumer Durables and Apparel, Consumer Services, and Media industries.

The survey respondents' data reveals that the majority of the people trusted to be in charged with ERM implementation among the sample firms are those with tertiary education qualifications (91.6%), within the age group of 41 and above, and are females (76.7%). Respondents' tenure as the person in charge their company's risk management ranges from one to ten years with a mean of 3.12 years suggesting that the person in charge of ERM among the sample firms are mostly experienced and academically qualified.

† Note that this total was achieved with dissemination assistance of the survey questionnaires by The Institute of Internal Auditors (Australia), The Risk Management Institute of Australasia and Thomson Reuters Australia.

Table 1. Respondents' Industry Membership.

Industry	n	%
1. Materials	13	21.6
2. Capital Goods	7	11.6
3. Energy	6	10
4. Commercial and Professional Services	4	6.7
5. Food, Beverage and Tobacco	4	6.7
6. Health Care Equipment and Services	4	6.7
7. Transportation	3	5
8. Banks	3	5
9. Diversified Financials	3	5
10. Insurance	3	5
11. Real Estate	3	5
12. Food and Staples Retailing	2	3.3
13. Utilities	2	3.3
14. Consumer Durables and Apparel	1	1.7
15. Consumer Services	1	1.7
16. Media	1	1.7
Total	60	100

4.2. ERM implementation stage

The stage of ERM implementation is measured using a five-point Likert scale based on Beasley et al.'s (2009) measurement instrument. The score and extent of implementation each point represents is shown in Table 2. Stages one to four are considered non-implementers while stages five to six are considered ERM implementers. Additionally, stage five indicates partial implementation while stage six indicates complete implementation. The majority of the respondent firms were ERM implementers (85%) while nine were non-implementers. This study reveals better results than that of Beasley et al. (2009) as 44% of their US respondents have no ERM process in place and have no plans to implement one. Furthermore, 18% of Beasley et al.'s (2009) respondents without ERM processes in place indicated that they were investigating the concept, but have made no decisions about implementing ERM. However, only 6.7% respondents of this study were at similar stage. The percentage of partial and complete ERM implementation also better in this study than that of Beasley et al. (2009) – 30% and 55% compared to 22% and 9% respectively.

Table 2. ERM Implementation Stages.

Implementation Stage	*n*	*%*
1. The organisation has not considered ERM.	1	1.7
2. The organisation has rejected the ERM concept.	0	0.0
3. Currently investigating the concept of enterprise-wide risk management, but have made no decisions yet.	4	6.7
4. No formal enterprise-wide risk management process in place, but have plans to implement one.	4	6.7
5. Partial enterprise-wide risk management process in place (i.e., some, but not all, risk areas addressed).	18	30
6. Complete formal enterprise-wide risk management process in place.	33	55
Total	60	100

4.3. Years of ERM implementation

The length of ERM implementation among the implementers is shown in Table 3. A majority (35.3%) of the firms have implemented ERM for more than 5 years, followed by those that implemented between four and five years (33.3%) and those between two and three years of implementation (23.5%). Only 7.8% of the implementer firms were in the first year.

Table 3. Years of Implementation.

Implementation Length	*Frequency*	*Percent*
In first year of ERM implementation	4	7.8
In years 2 - 3 of ERM implementation	17	33.3
In years 4 - 5 of ERM implementation	12	23.5
Beyond the 5th year of ERM implementation	18	35.3
Total Implementers	51	100

4.4. ERM embeddedness

Following Beasley *et al.* (2006) and Francis and Paladino (2008), the implementation is considered complete or full when ERM is embedded into corporate strategic planning and decision making processes. Francis and Paladino (2008) reported that best practices firms embedded ERM up 40% into their corporate strategic processes. As indicated in Table 4, the majority (63.6%) of the complete implementers embedded ERM into corporate strategic processes from 76% to 100%, whereas only 5.6% of the partial implementers had the same stage of ERM embeddedness. Only two complete implementers had a lower than 26% extent of ERM embedded into their corporate strategic processes. Overall, 43.1% of the implementers embedded ERM beyond 75% into their corporate strategic processes.

Table 4. ERM Embeddedness into Corporate Strategic Processes.

ERM Embeddedness – Partial Implementers (n= 18)	*Frequency*	*Percent*
0 - 25 %	3	16.7
26 - 50%	4	22.2
51 - 75%	10	55.6
76 - 100%	1	5.6
Total	18	100
ERM Embeddedness – Complete Implementers (n= 33)		
0 - 25 %	0	0
26 - 50%	2	6.1
51 - 75%	10	30.3
76 - 100%	21	63.6
Total	33	100

4.5. Outsourcing of ERM implementation

None of the implementers totally outsourced ERM implementation as revealed in Table 5. Majority of ERM implementation (86.3%) were conducted by in-house staff while 13.7% were conducted by means of internal staff and an external party.

Table 5. Outsourcing of ERM Implementation.

Responsible Party	*Frequency*	*Percent*
An in-house unit/function/department.	44	86.3
An outsource third party	0	0
An in-house unit/function/department and a co-source third party.	7	13.7
Total	51	100

4.6. ERM department size and CRO existence

As shown in Table 6, the size of in-house department responsible for implementing ERM ranged from one person to a maximum of 40 individuals, with an average of six people. CROs existed in 86.3% of the ERM implementer firms. Of this portion, 61.4% were hired by complete implementers while the remaining 38.6% were hired by partial implementers. The larger percentage of CRO existence in ERM implementer firms confirms the trend found in previous studies (Kleffner *et al.*, 2003; Liebenberg & Hoyt, 2003; Beasley *et al.*, 2005; Beasley *et al.*, 2008b; Pagach & Warr, 2008). Additionally, the CRO tenure ranged from one to 15 years with a mean of 3.96 years.

Table 6. ERM Department Size and the Existence of CRO.

	Minimum	*Maximum*
ERM Department Size; n = 51	1	40
CRO Tenure In Years; n = 50* (Mean = 3.96)	1	15
Existence of a CRO(Yes)	*Frequency*	*Percent*
All Implementers	44	86.3
Partial Implementers	17	38.6
Complete Implementers	27	61.4

*Refers to the firm that implemented ERM by means of internal staff and an external party.

4.7. ERM framework used

The AS/NZS 4360:2004 Risk Management Standard was superseded by the ISO 31000 at the end of 2009. However, this survey was launched in August of the same year. Thus, the results relating to the two were not combined as shown in Table 7. The majority (46 or 90.2%) of ERM implementers used either the ISO 31000 or the AS/NZS 4360:2004 frameworks; (4 or 7.8%) used all of the frameworks while only one firm (2%) relied on the COSO ERM framework. This finding reflects relevant development where the AS/NZS 4360:2004 has been embraced and adopted as, ISO 31000, the world's risk management standard.

Table 7. ERM Framework Used.

ERM Framework Used	*Frequency*	*Percent*
1. AS/NZS 4360:2004 Risk Management Standard	9	17.6
2. The Committee of Sponsoring of Organizations' (COSO) ERM Integrated Framework	1	2
3. ISO 31000 Risk Management	37	72.6
4. All the Above Frameworks	4	7.8
Total	51	100

5. Conclusion

This study adds to existing literature of ERM implementation by providing some empirical evidence on how Australian large companies are implementing ERM. It can be concluded that the majority of the sample firms among the Top 300 Australian listed companies implemented ERM, were from the materials, capital goods and energy industries, were at the complete implementation phase and have implemented ERM for more than five years, embedded ERM into their corporate strategic processes, did not outsourced the ERM implementation to external party, had hired CRO and used both ISO 31000 or the AS/NZS 4360:2004 frameworks. On top of that, firms with complete ERM implementation embedded ERM more extensively than firms with partial implementation. Similarly, a greater percentage of complete implementers hired CROs and embedded ERM into a greater percentage of their strategic business processes compared to partial implementers. Overall, it can be concluded that the extent of ERM implementation among the Australian sample firms appears to be better than those of other countries as reported comparable in previous studies.

However, due to the small sample size of the study and the focus on large companies, the generalisation of the above findings may not be possible. Future research may consider the key determinants, barriers and benefits of ERM implementation.

References

Aabo, T., Fraser, J. R. S., & Simkins, B. J. (2005). The Rise and Evolution of the Chief Risk Officer: Enterprise Risk Management at Hydro One. *Journal of Applied Corporate Finance, 17*(3), 62-75.

Beasley, M. S., Branson, B. C., & Hancock, B. V. (2008a). Rising Expectations. *Journal of Accountancy, 205*(4), 44.

Beasley, M. S., Branson, B. C., & Hancock, B. V. (2009). Report on the Current State of Enterprise Risk Oversight: AICPA.

Beasley, M. S., Chen, A., Nunez, K., & Wright, L. (2006). Working Hand in Hand: Balanced Scorecards and Enterprise Risk Management. *Strategic Finance, 87*(9), 49.

Beasley, M. S., Clune, R., & Hermanson, D. R. (2005). Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of Accounting and Public Policy, 24*(6), 521-531.

Beasley, M. S., Pagach, D., & Warr, R. (2008b). Information Conveyed in Hiring Announcements of Senior Executives Overseeing Enterprise-Wide Risk Management Processes. *Journal of Accounting, Auditing & Finance, 23*(3), 311-332.

Brown, I., Steen, A., & Foreman, J. (2009). Risk Management in Corporate Governance: A Review and Proposal. *Corporate Governance: An International Review, 17*(5), 546-558.

bt Isa, C. R. (2014). *Review of Enterprise Risk Management (ERM) Literature.* Paper presented at the International Conference on Technology and Business Management March.

Carlon, S., Loftus, J. A., & Miller, M. C. (2003). The Challenge of Risk Reporting: Regulatory and Corporate Responses. *Australian Accounting Review, 13*(3), 36.

Certo, S. T., Daily, C. M., & Dalton, D. R. (2001). Signaling Firm Value Through Board Structure: An Investigation of Initial Public Offerings. *Entrepreneurship: Theory & Practice, 26*, 33-50.

Chalmers, K. (2001). The Progression from Voluntary to Mandatory Derivative Instrument Disclosures - Look Who's Talking. *The Australian Accounting Review, 11*(1), 34-44.

Culpan, R., & Trussel, J. (2005). Applying the Agency and Stakeholder Theories to the Enron Debacle: An Ethical Perspective. *Business and Society Review, 110*(1), 59-76.

da Silva Rosa, R., Izan, H. Y., & Lin, M. (2004). Board Characteristics of Australian IPOs: An Analysis in Light of the ASX Best Practice Recommendations. *Australian Accounting Review, 14*(1), 25.

Desender, K. A. (2007). *The Influence of Board Composition on Enterprise Risk Management Implementation*. Paper presented at the 2007 Information Resources Management, Vancouver. http://ssrn.com/paper=1025982

Economist Intelligence Unit Limited and SAS. (2008). The bigger picture: Enterprise risk management in financial services organisations. *The Economist, September 2008*.

Eisenhardt, M., K. (1989). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57-74. doi: Doi 10.2307/258191

Francis, S., & Paladino, B. (2008). Enterprise risk management: A best practice approach. *Journal of Corporate Accounting & Finance, 19*(3), 19-33.

Hanssen, J. (2005). Corporate Culture and Operational Risk Management. *Bank Accounting & Finance (08943958), 18*(2), 35-38.

Harrington, S. E., Niehaus, G., & Risko, K. J. (2002). Enterprise Risk Management: The Case of United Grain Growers. *Journal of Applied Corporate Finance, 14*(4), 71-81.

Hill, D. (2008). An Asian Perspective on Risk Management *Australian Risk Roundtable* (pp. 27-38). Melbourne, VIC, Australia: Brolga Publishing Pty Ltd.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360.

Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate Governance and Board Composition: diversity and independence of Australian boards. *Corporate Governance: An International Review, 15*(2), 194-207.

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

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

Moeller, R. R. (2007). *COSO Enterprise Risk Management: Understanding the New Integrated ERM Framework*. Hoboken, NJ Wiley.

Olson, D. L., & Wu, D. (2008). *New Frontiers in Enterprise Risk Management*: Springer Berlin Heidelberg.

Pagach, D. P., & Warr, R. S. (2008). *The Characteristics of Firms that Hire Chief Risk Officers*. Paper presented at the The 2008 ERM Symposium Chicago Marriott Hotel, Chicago, Illinois http://www.mgt.ncsu.edu/erm/NCStateResearch.php

Robinson, G. (2008). *Risk Thinkers Guide* (2nd ed.). Melbourne, VIC, Australia: Brolga Publishing Pty Ltd.

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics, 87*(3), 355-374.

Standards Australia/Standards New Zealand. (2004). Risk management AS/NZS 4360:2004: Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020.

Standards Australia/Standards New Zealand. (2009). *AS/NZS ISO 31000:2009 Risk management— Principles and guidelines*. Sydney, NSW, Australia: Standards Australia and Standards New Zealand.

Stroh, P. J. (2005). Enterprise Risk Management at UnitedHealth Group. *Strategic Finance*, 26(29).

Subramaniam, N., McManus, L., & Zhang, J. (2009). Corporate governance, firm characteristics and risk management committee formation in Australian companies. *Managerial Auditing Journal, 24* (4,), 316-339.

Subramaniam, N., Wahyuni, D., Cooper, B. J., Leung, P., & Wines, G. (2014). Integration of carbon risks and opportunities in enterprise risk management systems: evidence from Australian firms. *Journal of Cleaner Production*(0).

Watson, A., Shrives, P., & Marston, C. (2002). Voluntary Disclosure of Accounting Ratios in The UK. *The British Accounting Review, 34*(4), 289-313.

Zwaan, L. d., Stewart, J., & Subramaniam, N. (2011). Internal audit involvement in enterprise risk management. *Managerial Auditing Journal, Vol. 26*(No. 7), 586-604.