

## **Risk Management Practices for Short-Term Insurance in Zimbabwe**

Batsirai Winmore Mazviona\*

*The study examined the current risk management practices of insurance companies and revealed that the risk management practices are not adequate. The objective of the study was to document the risk management practices in the short-term insurance industry. The key features investigated are risk management culture, risk control and extreme event management. A questionnaire was used as a research instrument for data collection. Closed questions were structured on a five point Likert-scale. A total of eighty six questionnaires were sent to short-term insurance companies. Purposive sampling was used to come up with research participants. The research participants comprised of claims processors, credit controllers, interns, managers and underwriters in the short-term insurance industry. The study period was from February 2013 to May 2013. The analysis was carried out in SPSS 16.0. Additionally, secondary sources which include journal articles were used to supplement the primary data. There is poor risk management culture in short-term insurance companies. The results show that the risk management practitioners in the Zimbabwean short-term insurance industry are not appropriately qualified and management does not view risk management as a tool that can provide their firms a competitive edge. Insurance companies have measures in place to manage high frequency low severity events, however have no measures in place to envision and manage low frequency high severity events. The implications of these findings are that, for a new approach like Enterprise Risk Management (ERM) to succeed there has to be a paradigm shift in the Zimbabwean short term insurers' approach to risk management the first being to strengthen their risk management culture. The efforts to adopt ERM must start in the board room and the short term insurance companies should integrate risk management into their organisation's objectives, philosophy, practices, and strategic plans.*

### **1. Introduction**

ERM is a topical issue (Connell 2007). Various terms have been used to describe ERM including holistic, integrated, strategic and the most widely used and generally accepted terminology is ERM. Since its inception, ERM has gained a large momentum in risk management literature and many researchers have provided insights of how ERM enhances firm performance and results in the maximisation of shareholders' value (Nocco & Stulz 2006; Hoyt & Liebenberg 2008; Yow & Sherris 2008; Pagach & Warr 2010; Grace et al., 2010; Eckles, Hoyt & Miller 2011). However, ERM is still very narrow in insurance industry although it is aimed to increase the stakeholders' value (Acharyya 2008). Golshan and Rasid (2012) state that, not many firms have adopted ERM although there is a lot of evidence that ERM is known as a tool to increase shareholder's value and further add that ERM is a new financial tool to manage risks evolving inside and outside the organisation. Subhani and Osman (2011) in their study found that there are very few enterprises from developing nations which are implementing ERM while developed nations' enterprises are huskily and vigorously involved in it. It is sad to note that, many insurers are still far from an optimal level of risk management and financial intermediation activities (Jabbour 2011). The failure of

---

\*Mr. Batsirai Winmore Mazviona, National University of Science and Technology, Department of Insurance and Actuarial Science, Bulawayo, Zimbabwe. [winmoreb@gmail.com](mailto:winmoreb@gmail.com)

## Mazviona

the Zimbabwean insurers to develop and implement sound risk management programs may result in insolvency which could weaken and destabilize the financial environment. Insolvency affects the interests of policyholders adversely. Therefore, insurance supervisors should ensure that insurers are properly addressing their risks through sound risk management programs. Duru (2013) reported "in view of the ever-evolving nature of the macro-economic and regulatory dynamics of the industry's operating environment, the need for regular and periodic evaluation of the effectiveness of the company's ERM process and internal controls cannot be over-emphasised; hence, the adoption of the framework".

Insurance is merely a sale of a promise to the policyholder or insured. The effectiveness of an insurance policy is seen when a claim occurs. Insurers are supposed to meet the obligation or promise it pledged at policy inception following a claim event. Lack of sound and proper ERM in insurance companies may result in insurers failing to pay claims at all or delay of payment. ERM is a new concept and as such no documented study has been carried out in the Zimbabwean environment. The results of this study are new and set a basis for comparison in future studies on ERM in Zimbabwe. The aim of the study was to find out the current risk management practices for short-term insurance industry in Zimbabwe. The study is motivated by the need to come up with sound ERM in the short-term insurance industry. The findings in this article go a long way in complementing the current regulatory mechanisms in the insurance sector.

The significance of the study is in two fold. Firstly, it makes use of primary and secondary data to get insight of the ERM in Zimbabwe. Hence, adding to the existing body of knowledge in risk management. Secondly, it provides various stakeholders that include regulators, insurers, reinsurers and the insured with current risk management practices in the Zimbabwean short-term insurance industry. The knowledge will assist them when making sound and well-informed decisions.

The article is organised as follows, section 2 reviews the literature in risk management, section 3 presents the methodology employed in this study, and section 4 provides the findings. Section 5 gives a summary of the findings and recommendations to various key players.

## 2. Literature Review

Risk management is traceable to the late 1940s and early 1950s and started as a so called silo-based approach to corporate risk management until the mid-1990s (Kraus & Lehner 2012). Traditionally risk management (TRM) in insurance companies is done in a silo structure (Acharyya 2008). A silo structure is an organizational set up whereby each operational activity is generally undertaken independently and, frequently, so too are the risks generated by those activities. Hoyt and Liebenberg (2008) argued that there are disadvantages to the traditional silo approach to risk management. Managing each risk class in a separate silo creates inefficiencies due to lack of coordination between the various risk management departments. Ratcliffe, Samer and Langer (2009) assert that TRM is often focused on risk identification, assessment, diversification and mitigation of predominantly operational risks. In TRM, risk identification means looking at causes and consequences, but with strong focus on management of specific risks only. There is divergence of interests between operational and investment departments in insurance companies. The divergent emanates from the risks of concern. Pure risk (downside) is of concern to the operational department while the investment department

## Mazviona

tend to focus on speculative risks which are downside and upside risks in nature (Acharyya & Johnson, 2006). Calandro and Lane (2006) highlight that, in simpler and less volatile times the silo organisational structure provided a workable frame work in which to conduct the business of insurance. Ratcliffe, Samer and Langer (2009) further argue that with TRM, it is not possible to manage strategic risks properly and to answer questions about mergers and acquisitions, major hedging strategies or entering into new lines of business. TRM is weak as it tends to focus on the downside, whereas strategic risk management is about optimum capital deployment which includes the upside as well. The International Actuarial Association (2008) states that the terms risk and risk management are commonly viewed through a lens of avoiding bad things happening and limiting the downside. However, a more enlightened view emerging is one of connecting risk to value maintenance and creation. Protiviti (2006) reached a similar conclusion that under TRM management the process is fragmented and risk is viewed as a negative (something to be avoided) reactive and ad hoc behaviour. Moreover, risk management is transaction oriented (or cost based) narrowly focused and functionally driven. TRM model is focused on managing uncertainties around physical and financial assets. The TRM concept is being perceived as an approach which is rather limited in terms of scope and application (Hussin 1996). The short comings of TRM have driven the popularity of ERM. ERM is a structured and disciplined approach which aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties an enterprises faces and hence creating value. ERM signifies that a comprehensive approach to risk management is undertaken by looking at a portfolio of risks that enables processes to align with the company's strategy and involves employees at all levels of the organisation (Deloach 2000). The problem was not answered by past studies particularly in the Zimbabwean short-term insurance context. This is due to lack of documented studies on ERM in Zimbabwe. This study endeavoured to close the knowledge gap on risk management practices in Zimbabwe short-term insurance industry. There are no limitations and problems since there is no previously particular study on risk management practices in Zimbabwe.

### 2.1 Components of ERM

The major components of ERM are risk-management culture, risk controls, extreme-event management, risk and capital models, and strategic risk management (Standard and Poor 2005). In the committee of sponsoring organisations of the treadway commission, COSO (2004) framework the components are split into eight categories which are: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication and monitoring. COSO (2004) points out that ERM is not strictly a serial process, where one component affects only the next. It is a multidirectional, iterative process in which almost any component can and does influence another. The ERM components are explained in subsequent sections.

#### 2.1.1 Risk Management Culture

The International Actuarial Association (2008) views culture as behaviour of people in an organisation, how they think or do things in an organisation which is shared by most of its members and must be learnt by all those who join an organisation if they are to make progress. The International Actuarial Association (2008) stipulates that all organisations have a risk management culture but the only issue is whether it is

## **Mazviona**

supporting the appropriate goals, activities, outcomes and mitigating risks of not achieving desired outcomes. Furthermore, culture can be learnt, shared and transmitted, and is reflected in the values, norms, beliefs and practices of an organisation. The International Actuarial Association (2008) further argues that cultural and behavioural characteristics of risk management will invariably be unique to an individual insurer, whether they be small, medium or large, reflecting the history, values and style of the insurer. The absence of a supportive culture will undermine the most sophisticated of ERM frameworks. Standard and Poor (2005) states that risk management culture is the degree to which risk and risk management are important considerations in all aspects of corporate decision making and the risk management culture must encompass the policy dimensions of ERM. They further point out that the main aspects of a risk management culture are the company's philosophy toward risk and its risk appetite, governance and organizational structure of the risk management function, risk and risk management external disclosures and internal communications, and the degree to which there is broad understanding and participation in risk management across the company. Risk management culture means that everybody who works in a company thinks about the risk that they are bringing into the company with their actions (Santori 2009). In an insurance company it can be in pricing, reserving and underwriting. Additionally, it could then be argued that in a company with effective ERM, the concept of risk should be well spread across the company and the company needs to have and be able to state a clear risk tolerance that is tied to the risk limit.

### **2.1.2 Risk Controls**

Risk control entails any activity that is aimed at preventing losses, the minimising the consequences of losses that may arise from any risks facing an organisation and the handling of an adverse event in advance or as it occurs. Santori (2009) states that the company has to identify all its main risks, monitor risks and to keep them within the stated limits. The objective of risk limits is to ensure that risks produce losses that are within tolerable and control processes. The limits have to be applied to all the risks of the insurance company. However, effective risk control requires a well-supported risk management programme.

### **2.1.3 Extreme-Event Management**

Extreme event management is concerned with the impact of low frequency adverse events which cannot be easily managed by control processes because the monitoring is not expected to show any results in most periods (Standard and Poor 2005). Santori (2009) suggests asbestosis as an example of an extreme event of the past and electromagnetic fields and terrorism as emerging risks. Standard and Poor (2005) asserts that a good risk management program includes a process of envisioning the impact of living disasters through stress testing and scenario analysis. Moreover, this would evaluate the potential impact on the company's reputation, liquidity and overall financial strength of specific catastrophic events.

### **2.1.4 Risk and Capital Models**

Standard and Poor (2005) notes that for most of the credit, market, and insurance risks, the degree of exposure to risk is not readily apparent from the company accounting system. Indicative, predictive, and sensitivity risk measures need to be used to monitor,

## Mazviona

control, and manage risk exposures. Indicative measures are obtained from information that might be directly available from the accounting, administrative or underwriting systems. Indicative measures give a broad indication of the trend in risk such as probable maximum loss, premiums earned, asset values, staff turnover rates and audit exception reports. Predictive measures are estimated using complicated and powerful simulation models. Predictive risk models usually directly or indirectly presume that the future is probabilistic and that risk can be measured as the loss that arises under a certain probability or other criteria. ERM requires that there is monitoring of all important risks, and it is therefore considered preferable to have a monitoring system based on indicative measures rather than have no monitoring of a significant risk (Standard and Poor 2005). Standard and Poor (2005) further asserts that economic capital is the amount of capital that is needed by an enterprise to provide support for retained risks of a company in a severe loss situation. Sweeting (2011) agrees with this view and states that economic capital is the additional value of funds needed to cover potential outgoings, falls in asset values and rises in liabilities at some given risk tolerance over a specified time horizon and that economic capital is calculated using an economic capital model, which is a type of risk model. The economic capital model is used to create simulations of the future financial state of an institution so that the range of potential outcomes can be analysed. The potential outcomes are then used in the calculation of some measure of risk that allows for an assessment of the level of capital that should be held, given a pre-specified risk tolerance and time horizon. The International Actuarial Association (2008) notes that the purpose of an economic capital model (ECM) is to provide a holistic assessment of the key risk drivers within an organisation and to devise risk management techniques to address these risks. An ECM generally comprises integrated asset and liability models and simulates the outturn of asset and liability cash flow experience over future periods (International Actuarial Association 2008). The typical output from an economic capital model comprises forecast future balance sheet, profit and loss accounts cash flow statements, and projected distributions of profit; capital and return on capital.

### 2.1.5 Strategic Risk Management

Santori (2009) views strategic risk management as the ability to measure all risks with one unique measure, deciding on a measure of profitability, and then to compare every action or every risk with this measure of profitability or measure of risk so that the company can choose, for a given level of risk, the most profitable business or vice versa. Santori (2009) further highlights that even in strategic risk management, economic capital models play a very important role. The role is attributable to the company's needs to have a consistent view across all its risks. The view enables a choice to be made for an overall strategic risk management which is effective in providing a competitive advantage following an ERM program.

## 3. Methodology

The purpose of the study was to find out the risk management practices by short-term insurance companies in Zimbabwe. A total of eighty six questionnaires were used in this study. The research participants comprised of claims processors (17%), credit controllers (5.7%), interns (9.4%), managers (18.9%) and underwriters (49%). Among the participants 64.2% and 35.8% are males and females respectively. The research instrument employed in this study was a questionnaire with closed questions based on the five point Likert scale. A pilot study was done to test the research instrument and

## Mazviona

refine it for easiness of answering it. The research instrument was used to collect primary data. Secondary data in the form of journal articles and other documented evidence were used to complement the study. The target group was short term insurance companies and the sample size was eight six. Purposive sampling was used because the research participants are practising in the short-term insurance industry and hence the required data could be easily obtained. The study period was from February 2013 to May 2013. A summary of descriptive statistics and a *t*-test were presented to establish the risk management practices of short term companies in Zimbabwe. The study has added new knowledge about risk management practices in short-term insurance industry in Zimbabwe. There was no previously documented evidence on risk management practices in Zimbabwe.

### 4. Findings

Table 1 shows the reliability coefficients based on the Cronbach Alpha, they range from good to excellent with the exception of the extreme risk management.

**Table 1: Reliability statistics**

	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Risk Management Culture	.919	11
Risk control	.856	5
Extreme event management	.605	2
Benefits of ERM	.760	7

#### 4.1 Current Risk Management Practices in the Short Term Insurance Industry

The sets of questions sought to understand the risk management practices of the short term insurance companies. Three main sections were looked at namely; risk management culture, risk controls and extreme event management.

#### 4.2 Risk Management Culture

In understanding the risk management practices of a company it is important to know the risk management culture because it is people who manage the risk. People throughout the organisation should be aware and have knowledge of risk management practises in the organisation. As such there are various aspects that make up the risk management culture in an organisation. The respondents were asked questions on these aspects. According to Table 2, the respondents perceived only two elements of risk management culture as having high need for corrective action in their organisations. Amongst the elements, it was found that the risk management staff in organisations should be highly and appropriately qualified (mean =3.47) and that management should view its risk management capabilities as providing a competitive edge (mean =3.40). All the other items obtained a neutral mean score. However, because looking at the mean alone tells part of the story it is important to consider the distribution of the responses. The standard deviation provides a valuable descriptive measure of this. Two very different distributions of responses to a 5 point rating can yield the same mean, for example in Table 2, responses for question 4 and question 5.

## Mazviona

It is important to note that standard deviation does not indicate right or wrong or better or worse, a lower standard deviation is not necessarily more desirable. It is used purely as a descriptive statistic. It describes the distribution in relation to the mean. The standard deviations of the majority of the items are slightly greater than one, which indicates that the individual responses on average, were a little over one point away from the mean.

**Table 2: Risk management culture**

	Mean*	Std. Deviation
7) Risk management staff is highly and appropriately qualified.	3.47	1.367
12) Management views its risk management capabilities as providing a competitive edge.	3.40	.987
13) Insurer actively learns from mistakes and loss situations. Policy and procedural changes are made to improve future risk management.	3.25	1.385
8) Risk management objectives are highly coordinated with business line goals.	3.23	1.396
6) Board regularly receives, discusses and understands reports on risk positions and the company's risk management programs.	3.13	1.287
9) Company incentive compensation supports the achievement of risk management objectives.	3.06	1.183
5) The company has a clearly articulated risk tolerance that is consistent with the goals and resources of the firm and the expectations of the board and other stake holders	2.98	1.394
4) Company's governance structure supports effective risk management through board access, authority and management reporting relationships for risk managers.	2.98	1.538
10) Risk management policies and procedures are clearly stated and widely known.	2.92	1.328
11) Information on risk management is widely communicated internally and externally to company management and stakeholders.	2.87	1.316
14) Risk management and monitoring is independent from risk taking and management.	2.81	1.161

\*-(The following scales are used to measure the respondents' perception on the importance of corrective action.

- Mean scores ranging from  $1.0 \leq M < 1.8$ : Very low importance
- Mean scores ranging from  $1.8 \leq M < 2.6$ : Low importance
- Mean scores ranging from  $2.6 \leq M \leq 3.4$ : Neutral
- Mean scores ranging from  $3.4 < M \leq 4.2$ : High importance
- Mean scores ranging from  $4.2 < M \leq 5.0$ : Very high importance)

## Mazviona

The key was adopted from Van Gruenen, Viviers and Venter (2011).

In Table 3, a test was conducted to establish whether there exists risk management culture among Zimbabwean short-term insurance industry. The null hypothesis is accepted in 80% of the cases above. Therefore the researcher concluded that there is a risk management culture among Zimbabwean short term insurance companies. The results for question 7 show that the risk management staffs in insurance companies are not adequately qualified and this could have resulted from the brain drain that happened in Zimbabwe during the economic crises. The results for question 12 highlight respondents perceive that management in the insurance companies does not view its risk management capabilities as providing a competitive edge. Such perceptions could have arisen from the instances that the employees have encountered at their companies.

**Table 3: One sample test for risk management culture**

Question	Test Value = 3			
	t	Df	Sig. (2-tailed)	Significance Test*
5	-.099	52	.922	0
6	.747	52	.458	0
7	2.512	52	.015	1
8	1.181	52	.243	0
9	.348	52	.729	0
10	-.414	52	.681	0
11	-.731	52	.468	0
12	2.922	52	.005	1
13	1.289	52	.203	0
14	-1.183	52	.242	0

\*1= significant; 0= not significant

### 4.3 Risk Control

An important element of a successful company is its ability to identify sources of risk effectively and develop tools to measure and manage those risks that it has identified. A company that cannot measure its risks obviously cannot manage the risks. Risk control is linked to the risk management culture. The opinions of the respondents on the ability to implement appropriate mitigating actions and controls after identifying its risks are presented in Table 4. From the evidence provided in Table 4, the means of the items on risk control obtained a neutral mean score. Respondents are neutral in their perceptions about the importance of corrective actions on risk control practices in their companies. The individual responses to the questions on average were a little over one point away from the mean.



## Mazviona

**Table 4: Risk control**

	Mean*	Std. Deviation
19) Company has a process in place to see that risk limits, management programs are followed as planned. Exceeding limits has a clear, predetermined and effective consequence.	3.15	1.215
17) The company has clearly documented limits and standards for risk taking and risk management that are widely understood within the company.	3.04	1.467
18) Company has clear programs in place that are regularly used to manage the risks that the company takes.	3.00	1.286
16) The company monitors all significant risks on a regular basis, with timely and accurate measures of risk.	2.98	1.293
15) Management has identified all significant risk exposures	2.85	1.231

Table 5 shows that the null hypothesis of Zimbabwean short term insurance companies having risk control measures is accepted at 5% level of significance. All the questions are in support of the null hypothesis and hence a conclusion was reached that the short-term insurers have risk control measures in place.

**Table 5: One sample test for risk control measures**

Question	Test Value = 3			
	T	df	Sig. (2-tailed)	Significance Test*
15	-.893	52	.376	0
16	-.106	52	.916	0
17	.187	52	.852	0
18	.000	52	1.000	0
19	.904	52	.370	0

\*1= significant; 0= not significant

### 4.4 Extreme Event Management

Risk management is not complete if the practice only addresses risks that currently affect the enterprise only. Effective risk management should also consider those risks that could affect the enterprise in the future. Such risks are of low frequency but high severity. Companies should have early warning sign systems for such risks. The risks can include IT failure or a stock market crash and these catastrophe events have an impact on a company's reputation, liquidity and overall financial strength. Table 6 provide a summary of the descriptive statistics of opinions to the questions on extreme event management. The respondents perceive the way their companies consider extreme events like terrorism as an item of low importance of corrective measures. Respondents are neutral in their perceptions about the importance of corrective measures on the processes of envisioning the impact of likely disasters in their companies. The responses to the questions are concentrated around the mean.

## Mazviona

**Table 6: Extreme event management**

	Mean*	Std. Deviation
20) The company has a process of envisioning the impact of likely disasters through stress testing and scenario analysis.	2.63	1.085
21) The company has a consideration of terrorism, natural disasters, an IT failure, a power failure, a stock market crash, an interest rate spike etc, while including a process of early warnings that could allow company management to anticipate disasters, however short the period of notice	2.52	1.196

From Table 7, the null hypothesis that the Zimbabwean short-term insurers having measures put in place to control extreme events fails in both cases; therefore the researcher concluded that at 5% level of significance, Zimbabwean short-term insurance companies have no measures in place to control extreme events.

**Table 7: One sample test for control measures to deal with extreme events**

Question	Test Value = 3			Significance Test*
	T	df	Sig. (2-tailed)	
20	-2.266	52	.023	1
21	-2.898	51	.006	1

\*1= significant; 0= not significant

The results are new in the context of the Zimbabwean short-term insurance industry. There are no prior studies carried out for risk management practices in Zimbabwe. There is lack of qualified risk management staff and no awareness on the importance of risk management which is inconsistent with the notion raised by (Santori 2009). Santori (2009) argues that every employee must think of risk management which is not the case in Zimbabwean short-term insurance industry. The situation for risk management practices in short-term insurance industry in Zimbabwe is sub-optimal which is akin to arguments presented in (Jabbour 2011). Although risk control measures are in place, there are not sufficient to guard against extreme events. These extreme events can bring an organisation down if not managed. Therefore short-term insurance companies in Zimbabwe must have proper risk management measures as this is what encompasses a good risk management (Standard and Poor 2005).

## 5. Conclusions and Recommendations

The first hypothesis was testing whether there is a risk management culture in the Zimbabwean short term insurance companies. The findings of the study show that risk management culture is there among insurance companies. However, the issue of concern is that the respondents perceive the risk management staff in their companies as lacking appropriate qualifications. Management does not view their risk management capabilities as providing a competitive edge. The researcher concluded that there is a poor risk management culture in the short-term insurance industry. In order for the

## Mazviona

companies to be able to effectively implement and benefit from ERM, there has to be a strong risk management culture in the organisations. The second hypothesis was testing whether insurance companies have risk control measures to manage the risks that they are exposed to. The results confirm that there are risk control measures in place. The researcher also tested a hypothesis to provide evidence whether the short term insurers manage extreme events. The results showed that there were no measures in place to manage such risks. The respondents expressed the process of envisioning the impact of likely disasters through stress testing and scenario analysis as a weakness were low importance for corrective measures is placed in their companies.

In light of the conclusions, recommendations are made to the regulator, education sector and insurers. Firstly, the regulator must ensure short-term insurance companies have risk management mechanism such as ERM. The mechanism will help strengthen the financial position of insurers and hence protect the insured. The regulator has a role to play in providing awareness on the importance of risk management to the insurance industry. Additionally, the regulator might collaborate with educational institutions to come up with a framework to increase awareness. Secondly, the education sector and other training institutions have a role to come up with programmes on risk management so as to equip insurance practitioners with the knowledge required to execute their duties. Finally, insurers need to come up with internal measures which supplement the regulatory requirements so as to control extreme events. This is motivated by the inadequacy of current risk control measures to manage extreme events. The study raises important research questions. These include what risk management programmes are suited for short-term insurance companies in Zimbabwe? How Solvency II and ERM can be implemented in Zimbabwe insurance industry? How regulators can ensure risk management programmes are implemented? What skills should risk management practitioners possess to effectively execute their duties?

## References

- Acharyya, M 2008, *In measuring the benefits of enterprise risk management in insurance: An integration of economic value added and balanced score card approaches*, viewed 25 February 2013, <http://www.soa.org/library/monographs/other-monographs/2008/april/mono-2008-m-as08-1-acharyya.pdf>
- Acharyya, M & Johnson, J 2006, *Investigating the development of enterprise risk management in the insurance industry: An empirical study of four major European insurers*, viewed 28 February 2013, <http://www.actuaries.org.uk/research-and-resources/documents/investigating-development-enterprise-risk-management-insurance-indu>
- Calandro, JJ & Lane, S 2006, 'An introduction to the enterprise risk scorecard', *Measuring Business Excellence*, vol 10, no. 3, pp. 31-40.
- Connell, G 2007, *A case study: ERM implementation at Erie Insurance Group*, viewed 28 February 2013, [www.casact.org/education/spring/2007/handouts/connell.ppt](http://www.casact.org/education/spring/2007/handouts/connell.ppt)
- COSO 2004, *Enterprise risk management: Integrated framework executive summary*, viewed 1 March 2013, [http://www.coso.org/documents/coso\\_erm\\_executivesummary.pdf](http://www.coso.org/documents/coso_erm_executivesummary.pdf)
- Deloach, JW 2000, *Enterprise-wide risk management: Strategies for linking risk and opportunity*, Financial Times/Prentice Hall, London.

## Mazviona

- Duru, N 2013, *STI adopts enterprise risk management framework*, viewed 1 March 2013, <http://www.thisdaylive.com/articles/sti-adopts-enterprise-risk-management-framework/139330/>
- Eckles, DL, Hoyt, RE & Miller, SM 2011, *The impact of enterprise risk management on the marginal cost of reducing risk: Evidence from the insurance industry*, viewed 1 March 2013, <http://www.sju.edu/int/academics/hsb/resources/workingpapers/Papers/11-5.pdf>
- Golshan, NM & Rasid, SZA 2012, 'What leads firms to enterprise risk management adoption? A literature review', *International Conference on Economics, Business and Marketing Management*, vol 29 no. 2012, pp. 276-280.
- Grace, MF, Leverty, TJ, Phillips, RD, & Shimpi, P 2010. *The value of investing in enterprise risk management*, viewed 1 March 2013, [http://www.researchgate.net/publication/229004630\\_The\\_Value\\_of\\_Investing\\_in\\_Enterprise\\_Risk\\_Management](http://www.researchgate.net/publication/229004630_The_Value_of_Investing_in_Enterprise_Risk_Management)
- Hoyt, RE & Liebenberg, AP 2008, *The value of enterprise risk management: Evidence from the U.S. insurance industry*, viewed 1 March 2013, <http://www.ermsymposium.org/pdf/papers/Hoyt.pdf>
- Hussin, MR 1996, 'An examination of responses to risk in ASEAN industry and commerce', PhD thesis, Glasgow Caledonian University, Glasgow.
- International Actuarial Association 2008, *Practice note on enterprise risk management for capital and solvency purposes in the insurance industry*, viewed 2 March 2013, <http://www.actuaries.org.uk/research-and-resources/documents/practice-note-enterprise-risk-management-erm-capital-and-solvency-pdf>
- Jabbour, M 2011, *The impact of enterprise risk management on capital allocation in the insurance companies*, viewed 2 March 2013, <http://ssrn.com/abstract=1910283>
- Kraus, V & Lehner, OM 2012, 'The nexus of enterprise risk management and value creation: A systematic literature review', *ACRN Journal of Finance and Risk Perspectives*, vol 1, no. 1, pp. 91-163.
- Nocco, BW & Stulz, RM 2006, 'Enterprise risk management: Theory and practice', *Journal of Applied Corporate Finance*, vol 18, no. 4, pp. 8-20.
- Pagach, D & Warr, R 2010, *The effects of enterprise risk management on firm performance*, viewed 3 March 2013, [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1155218](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1155218)
- Protiviti 2006, *Guide to enterprise risk management: Frequently asked questions*, viewed 3 March 2013, <http://www.knowledgeleader.com/KnowledgeLeader/content.nsf/Web+Content/WhitePapersArticlesGuidetoEnterpriseRiskManagementFrequentlyAskedQuestions!OpenDocument>
- Ratcliffe, W, Samer, F & Langer, B 2009, *From risk management to ERM*, viewed 3 March 2013, [http://www.scor.com/PandC\\_docs/SCOR\\_FocusERM\\_102009.pdf](http://www.scor.com/PandC_docs/SCOR_FocusERM_102009.pdf)
- Standard & Poor 2005, *Insurance criteria: Evaluating the enterprise risk management practices of insurance companies: Rating direct*, viewed 5 March 2013, [http://www.standardandpoors.com/spf/upload/Ratings\\_US/Enterprise\\_Risk\\_Management\\_5\\_7\\_13.pdf](http://www.standardandpoors.com/spf/upload/Ratings_US/Enterprise_Risk_Management_5_7_13.pdf)
- Santori, L 2009, *Enterprise risk management for insurers: The rating agency's view*, viewed 7 March 2013, [http://www.scor.com/PandC\\_docs/SCOR\\_FocusERM\\_102009.pdf](http://www.scor.com/PandC_docs/SCOR_FocusERM_102009.pdf)

## Mazviona

- Subhani, MI & Osman, A 2011, 'The essence of enterprise risk management in today's business enterprises in developed and developing nations', *European Journal of Social Sciences*, vol 25, no. 4, pp. 515-524.
- Sweeting, P 2011, *Financial enterprise risk management*, University Press, Cambridge.
- Van Gruenen, C, Viviers, S & Venter, E 2011, *Institutionalisation of business ethics in the life insurance sector*, viewed 27 April 2013, [www.benafrica.org/wp-content/.../11/Van-Greunen-Viviers-Venter.pdf](http://www.benafrica.org/wp-content/.../11/Van-Greunen-Viviers-Venter.pdf)
- Yow, S & Sherris, M 2008, 'Enterprise risk management, insurer value maximisation, and market frictions', *ASTIN Bulletin*, vol 38, no. 1, pp. 293-339.