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**Title of the article:**

A generic framework to measure the performance of Enterprise Risk Management –  
evidence from an empirical study in insurance firms

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## **Abstract**

Risk is inherent in all functions of a business. The overall concept of Enterprise Risk Management (ERM) is to measure and manage all significant risks of the business holistically, irrespective of type and source. Consequently, the selection of an appropriate performance measure of ERM is complex but critical. The literature on performance measurement within the disciplines of financial management and strategic management were evaluated in the context of ERM. Traditionally the literature on risk management fundamentally differs within these two disciplines. Consequently, it is challenging to develop a framework that integrates the core concepts of risk from these two disciplines in order measure the performance of ERM. This paper develops the results of a previous empirical study (by the author) on the concept, structure, challenge and performance of ERM, where it was reported that no integrated framework for measuring the performance of ERM exists. However, this theoretical paper now proposes a generic integrated framework. The study offers significant advances in measuring the benefits of Enterprise Risk Management.

## **Keywords:**

Enterprise Risk Management, Performance Measurement, Financial Management, Strategic Management, Shareholder Value, Stakeholder Value

## **Main text**

### **INTRODUCTION**

Recently, practitioners and academics have shown growing interest in Enterprise Risk Management (ERM). A range of studies have been undertaken to define and design ERM systems from several disciplinary perspectives. At least two perspectives of ERM have emerged in the literature. One is based on the economic and financial perspective focusing more on the shareholder value model. The other is from a strategic management aspect focusing more on decision making and the view of controllable risk taking (Mikes, 2009). However, the effectiveness of ERM systems still remains untested because of the issues in conceptualizing risk coherently beyond disciplinary silos<sup>1</sup>. Moreover, there exists an assumption within the practitioner and academic communities that ERM adds value to the firm (Nacco, 2006; Fatemi, 2002). However, no realistic evidence is available in the literature to measure and justify this assumption. Recently, Gordon (2009) proposed a framework to measure the benefits of ERM. **They argued that “the relationship between ERM and firm performance is contingent upon the appropriate match between ERM and five factors affecting the firm: environment, uncertainty, industry competition, firm size, firm complexity, and board**

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of directors' monitoring". However, this study did not take sector specific business models and techniques into consideration, which may heavily influence the design and application of ERM. It is now established in the literature that the management of enterprise risk is not purely a technical issue and the problems associated with ERM cannot be solved on the basis of scientific evidence alone. In general, ERM is a part of top-level, strategic decision making processes, where the exercise of prudent judgment is highly essential. This needs to be reflected in a performance measurement framework of ERM. The ultimate aim of this study is to propose a holistic framework<sup>2</sup> for measuring the performance of ERM.

The paper is divided into three sections. The first section explores relevant literature. It starts with a brief description of the key findings from the original study. The findings were published in The Geneva Papers for Risk and Insurance (Acharyya (2006b)). Thereafter, an overview of ERM is discussed from existing literature. It then includes a discussion on performance measures from the perspectives of financial management and strategic management. The essential characteristics of a framework to measure the performance of ERM are also discussed in terms of regulatory and rating agency initiatives. Section two details the proposed framework, which is the output of

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<sup>2</sup> the framework is defined here as an open structure that gives shape and support to something [i.e. measuring the performance of ERM]

this study. Finally the conclusion of the study is drawn and justification of the framework provided. The direction of future research on the topic is then proposed.

## **SECTION 1: LITERATURE REVIEW**

The objective of this theoretical research is to propose a multidimensional framework for measuring the performance of ERM. Research by Acharyya (2006) studied the ERM development of four large European insurers<sup>3</sup> (**hereinafter referred as 'Cases'**) **between 2003 and 2006**<sup>4</sup>. This original study was designed to explore the motivation, understanding, design, challenges for implementation, and performance of ERM in insurance. The data (mostly qualitative) was collected through interviews and structured questionnaire surveys with 60 insurance and risk management professionals. The data was analysed using comparative analysis. It is not the intention to test and validate a priori framework based on the empirical evidence as seen in the case studies; however in continuation of the original study, this article follows an inductive approach under the naturalistic paradigm. The empirical results of the case study research were previously published in Acharyya and Johnson (2006). Consequently, they are not reiterated in this article. However, the following paragraphs discuss the key findings where relevant to the objective of this article. They are arranged in five headings i.e., the rationale of ERM; the ownership of risk; risk perception across the management hierarchy; the heterogeneous characteristics of risk; and the performance of ERM.

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<sup>3</sup> Their identities remain anonymous to maintain confidentiality.

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## ***The rationale of ERM***

While globalization offers more opportunity to the business, it creates more risks, particularly, strategic risks<sup>5</sup> (Slywotzky 2005). However, alignment of risk management with the objectives of business is challenging. In the original study the respondents expressed confidence in their ERM initiatives, believing in the **fact that the investors' community is keen to pay appropriate value for the risk management efforts of their organisations**. The studies revealed the fact that in practice, **ERM is designed to protect insurers' capital-base** and to support value creation by making superior risk management decisions. This argument finds similarities with the perspective of financial management literature, where one of the main concerns of risk management is to reduce the volatility of future cash flows.

In the original study, ERM is seen as a management function, not merely one of control and compliance. The financial managers believed that compliance is an essential part of risk management in reducing the volatility of future cash flows but it is not necessarily an approach which creates value for shareholders where volatility is often desired. The respondents believe that risks must be identified, assessed, quantified, mitigated and managed, at all appropriate levels. Consequently, it would be wrong to think that the management of risk is only the responsibility of the risk management department, and in particular, the Chief Risk Officer. The managers of all business functions, who are the key risk takers within an organisation, are in the best position to handle the risk at an early stage of development.

Although ERM is conceptually seen as a simple idea, its implementation is challenging (Nocco 2006). Risk is dynamic by nature (Wang 2006) and the degree of severity is often

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<sup>5</sup> Strategic risk (an issue for top-level policy/decision makers), the effect of which is visible in longer term.

unknown, in particular, at any future point in time. Consequently, identification and modelling of risk (in particular, emerging risks) is extremely difficult<sup>6</sup>. Moreover, solely quantitative analysis is found to be inadequate to wholly analyse insurers' ERM activities. It is believed that a holistic perspective for analyzing risks of the enterprise must be understood, in the subjective context of each element of risk, in terms of its relationship to the people and organisations that execute the process (O'Connell 2005).

### ***The ownership of risk***

It is revealed that the corporate structure relevant to risk functions is founded on a three level defense model. In the first line of defense, the business managers (i.e., risk takers) create [operational] risk and business opportunities. They include local and regional managers who remain in direct touch with customers. The second line of defense are risk observers (e.g., departmental heads, actuaries and the chief risk officer) and those responsible for process management including mid and top level decision making. They hold a supervisory role to oversee the holistic risk management approach including assessing the correlations and interrelationships between risks across the organization. The third line of defense (e.g., internal auditors) exists to measure the performance of the process and systems and provide assurance on their capabilities.

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<sup>6</sup> The original study finds emerging risks are in fact, the biggest challenge for the insurance industry. However, the managers believe that early identification of emerging risks also provides business opportunities.

The interviews in the original study also found misunderstanding between the role of risk professionals (e.g., actuaries) and internal audit in the function of operational risk management. It is often perceived that both professions are performing the same job on a unique issue i.e., the management of operational risk. This is not true. In fact, the role and responsibilities of these two professions in relation to operational risk is found to be very much distinct but complementary. It is found that the role of internal audit focuses primarily on the integrity and control (i.e., the performance) of all processes. However, risk professionals develop the process by focusing on how to identify, model, measure and manage operational risk considering the risk appetite and risk culture of the individual firm. The process is often based on robust and scientific methodology. Reliable quantitative and categorical data is crucial to produce the clear results necessary for risk taking and strategic and operational decision making within the firm. Internal audit functions do not intend to focus on the complete accuracy of the process but are responsible for identifying the operational errors in executing the process, accepting the process as valid. Upon reviewing the performance of the process in its execution (whether the risk management process has been followed correctly) the primary role of internal audit as part of the third line of defense, is to give an independent opinion on the overall control framework at the execution level and provide assurance on the effectiveness of the risk management process at the operational level, in terms of its stated objectives.

### ***Risk perception across the management hierarchy***

It was also found from the views of the respondents in the original study that the perception of risk changes across the management hierarchy at the strategic, operational and tactical levels. However, this hierarchy is based on the time horizon for activities and the authority of taking risk and making decisions on risk (Rushton 2001). Ideally, the strategic level measures the influence of top level management decisions, very often reflecting investigation of broad based policies, corporate financial plans, competitiveness and level of association to organisational goals. The tactical level deals with resource allocation and measuring performance against targets to be met, in order to achieve results specified at the strategic level. In fact, measurement of performance at the tactical level provides valuable feedback on mid-level management decisions. However, it is argued that at the operational level, the measurement metrics require accurate data and access to the results of decisions by lower level managers. Nevertheless, the achievement of operational objectives leads to the achievement of tactical objectives (Gunasekaran 2004). These findings from the original study illustrate the fact, that the degree of risk is associated with the organisational complexities throughout the levels of management hierarchy. However, the original study found it challenging to measure the degree of such risk and their dependencies at various management levels. In addition, the majority of respondents in the original study believed that ERM is linked to the performance measurement and management processes of their organisations. However, the original study finds that the knowledge or techniques to measure the implications of such alignment, has yet to evolve in the insurance industry. Similarly, the method of creating and measuring the value of **insurers' ERM** still remains untested by the shareholders.

### ***The heterogeneous characteristics of risk***

It is found that practitioners categorise business risk into two key types i.e., financial risks and non-financial risks. The financial risks are then categorised mainly into market, credit and liquidity risks. Market risks are then further categorised as those relating to the fluctuation (i.e., volatility) in the commodity price, stock market price, interest rate, currency rate, etc. Non-financial risks are categorised under the many headings of strategic risk, operational risk, legal risk, compliance risk, reputational risk, system risk, model estimation risk, information technology risk, supply change risk, agency risk, etc. Due to the massive distraction of the recent financial crisis, the policy making agencies (e.g., regulators) as well as organisations have concentrated on broader types of risk e.g., systemic risk, merger and acquisition risks, etc. In investigating the problem of categorising risks with an endless list found that the cause and the effect problems in perceiving and naming risks is behind the endless list of categorisation. In addition, the sources of risk, either internal or external, influence managers to categorise risks. For example, risks arising from internal sources (e.g., people, process, and systems) are mostly non-financial whereas financial risks arise in general, from external sources (e.g., environmental damage, financial markets and the economy). However, this principle does not equally apply in all circumstances. For instance, organisations incur financial losses on their investment portfolio not only due to adverse market movements, but also through inadequate investment decisions (i.e., prediction or forecasting error). Whereas the classification of non-financial risks is based on the causes of the events, financial risks are perceived on the basis of the effect (i.e., financial consequences) of the events. Some managers however believe that strategic risk (in some cases it is the operational risk), is the cause of most financial risk and there exists therefore a overlap between financial risk and non-financial risk. Consequently, management of financial risk using

quantitative measures and techniques is not complete because the non-financial element remains unaddressed within such a silo view of risk management.

Since the future is often unpredictable particularly during catastrophic events, a good decision may produce negative (or unwanted) outcomes and vice versa. Consequently, risk demonstrates heterogeneous characteristics and affects the organisation holistically. Subsequently, the management of risk in isolation does not always work in extreme (or tense) situations (i.e., when many things occur together at a specific point of time).

### ***The performance of ERM***

The original study could not find any clear answer on how managers measure the performance of ERM. Insurers consider ERM as good business practice which may result in various successes e.g., compliance with [solvency] regulations, achievement and maintenance of superior ratings that then provides competitive advantage in business ventures, etc. The positive results in forecasting future cash flows with a higher level of accuracy, making effective contingency plans to overcome future market crisis, etc. are all good examples for managing the business as a whole. However, the financial managers (who are seen to run the ERM functions) are more concerned with the benefits of ERM in creating shareholder value. It is revealed by in the original study that the key purpose of putting ERM in place is to reduce the consequences of **“surprises” on the financial capability of the firm. This is in addition to the traditional risk management** that can usually be seen in most large firms (e.g., internal auditing, insurance and other risk controlling and mitigation techniques). This study aims to develop a framework to measure the performance of ERM.

At the heart of the findings from the original study appears an uneven level of understanding by managers, of ERM and its associated factors. The following paragraphs will clarify the meaning of ERM as seen in the literature. The practice of ERM in insurance including the initiatives of regulators and rating agencies will be revealed. Thereafter, ERM will be integrated with the financial management and strategic management literature on risk.

### ***An overview of ERM***

The following paragraphs define ERM; its origins; objectives and key issues, including a review of current practice of ERM in the insurance<sup>7</sup> industry. The authors purposely selected the insurance industry for developing a framework to measure the performance of ERM. Insurers being the risk carriers of other organisations are assumed experts in managing the risk they underwrite; in addition to the risks they face also themselves. Originally the concept of risk management essentially evolved from the insurance business. The key functions of an insurance company (e.g. underwriting, pricing, reserving, reinsurance, claims management, investment, etc.) are built on the contingency perspective of risk, in particular, the theory of loss prevention. Consequently, it is assumed that the techniques and frameworks developed and utilised within the insurance industry to measure the benefits of their ERM, could be generalized across other business sectors.

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<sup>7</sup> For the purpose of this article 'insurance' includes both insurance and reinsurance

### **What is ERM?**

In practice, the corporate functions of an insurance company include the process of underwriting, including reinsurance and claims settlement, marketing, finance and investment, accounting and human resources. Indeed, risk is inherent in all of these functions and there is a large amount of diverse literature in defining risk. In general, the portfolio of all risks in running insurance business is defined as insurers' enterprise risk, whatever the source or nature. From a strategic point of view Dickinson (2001) defines enterprise risk as "a measure of the degree to which the outcomes from the **strategy may differ from (or fail to meet) the objectives**". The Casualty Actuarial Society (CAS) (2003) defines enterprise risk as the combination of hazard, financial, operational and strategic risks<sup>8</sup>, whereas the Committee of Sponsoring Organizations of **the Treadway Commission's** (COSO) definition includes four risk categories i.e. strategic, operations, reporting, and compliance (Moeller, 2007). These definitions suggest that ERM essentially needs an integrated view across all risk classifications and all business segments. The financial industry, in particular insurance and banking, has observed great movement in risk management development in recent years, which in essence has reshaped their business models. Ideally, risk management is an integral **part of insurers' business strategy**. It is evident that due to correlation between different risk types, risk affects the organisation holistically. Since it is complex to identify all the risks of an organisation, mainly because of human perception and

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<sup>8</sup> The general criticism of CAS approach is that it has a narrow view of risk and overlooks organisational issues that drive the outcome of risk. In contrast, COSO emphasizes the risk management process rather than the risk itself.

subjectivity, the recent efforts of insurance companies concentrates on the identification and management of emerging risks . However, it is believed in practice that these emerging risks, although complex, present greater business opportunities than other more familiar risks.

Reflecting on the various views and opinions in practice, the following definition of enterprise risk has been adopted for the purpose of the study:

The enterprise risk is a collection of all significant risks<sup>10</sup> that an organisation holds over a particular time horizon during its operation, irrespective of type (i.e. both financial and non-financial) and source (i.e. both internal and external).

This generic definition of enterprise risk emphasises that management should consider all significant risks of a firm from a holistic perspective so that in addition to seizing opportunities, no threats remain in the process of making and implementing strategic decisions when operating the business.

As mentioned earlier, insurance companies are seen as bearers of risk and therefore risk management is the key function of an insurance business. In addition to the risk of policyholders (e.g. underwriting risk), which in itself is risky, further risks

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<sup>9</sup> Emerging risks (i.e. Climate Change, Tropical Cyclones) are developing or changing risks which are difficult to quantify and may have a major impact on insurers' book of business.

are created during the operation of business (e.g. investment), when using tools and techniques (e.g. re/retro insurance), in making strategic decisions (e.g. territorial expansion) and in meeting **stakeholders' expectations** (i.e. compliance with regulations). Accordingly, in managing the core underwriting risk, insurers create new risks (Bernstein 1996). Consequently, a successful insurer must be a specialist in managing its enterprise risk. From this perspective enterprise risk management can be broadly defined as –

The management of enterprise risk, which applies the core risk management process (i.e., early identification, profiling, modelling, both qualitative and quantitative measurement, optimal transfer/financing in **terms of firm's risk appetite**<sup>11</sup>, evaluation and monitoring) to the dynamics of the risks

closely associated to the products of specific business and sectors (e.g., banks, insurance, energy, etc). A detailed analysis of these two approaches is not within the scope of this article. However, interested readers may consult the works of Moeller (2007), Woods (2008), Culp (2002) etc. This article adopts both process and risk oriented approaches.

The above definition of ERM may differ from the understanding in practice at the technical level in insurance consider only the extreme risks, with low frequency and high severity exposures, in defining enterprise risk. This issue will be discussed further in the following section.

### ***The practice of ERM in insurance***

Although insurers are specialists in risk management, they often manage risks in silos (or fragmentally) without taking their holistic effect into consideration. Consequently, traditional risk management has proved inadequate for the survival of the organisation during unexpected events (e.g., downturns, large natural and man-made catastrophes). Nevertheless, for the purpose of profit and increase value, even in volatile and uncertain markets, large

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<sup>12</sup> For the purpose of this article, uncertainty is used as an umbrella term to indicate the situation where the implication is unknown. Whereas, risk refers to an extracted part of uncertainty, where the implication of an event

insurers that are highly exposed to emerging risks (those are catastrophic in nature), focus on managing them in a holistic framework. Primarily, the effort was limited to modelling and measuring risks to assess their degree of significance (in terms of frequency and severity) and managing them, using statistical techniques (i.e. asset-liability management, dynamic-financial analysis, etc.<sup>13</sup>). Gradually, the concepts of internal control and corporate governance were added to this effort and the drivers of risk were broadened from insurance to financial, operational and strategic risks (Dickinson 2001). The results of some destructive events (e.g. a man-made catastrophic event on 11 September 2001<sup>14</sup>; a rising number of natural catastrophes worldwide, etc.) and a growing public awareness of the potential implications of pandemic influenza were key drivers of ERM<sup>15</sup>. In addition, the initiatives of regulators in the area of **measuring insurers' solvency and** new rating criterion inspired insurance companies to design and adopt ERM<sup>16</sup>.

A study by Acharyya (2006b) discovered that the practice of ERM in the insurance industry is uneven. Moreover, there appears a lack of convergence between

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associated with the situation (either gain or loss) can be estimated. It is important to note that the difference between risk and uncertainty [also vulnerability] is an unsolved issue and interested readers are referred to the work of Knight (1921).

<sup>13</sup> The technical details of these risk management techniques are not discussed in this article. Interested readers are recommended to read Swiss Re (2000), Tennant (1989), Kaufmann (2001), etc.

<sup>14</sup> The attack on the twin-towers in New York which caused approximately \$US 40 billion insurance loss

<sup>15</sup> **Interested readers may study the works of Acharyya (2001) and, Dickinson (2001) for further details on the evolution of risk management.**

<sup>16</sup> The regulators and rating agencies' ERM criteria are discussed in section 4 of this article.

accounting and regulatory regimes, and the ever increasing interest in ERM and economic capital modelling by both insurers and rating agencies. The Chief Risk Officer (CRO) Assembly in 2006<sup>17</sup> noted that rather than solely a control and a compliance activity, ERM is a management function, **which needs the support of a company's board of management**. In addition, the insurance industry still needs to work to change its risk culture<sup>18</sup>. It is argued that while the insurance industry has been working hard at a qualitative approach to risk management, the most challenging issue in the future will be to enhance the development of quantitative modelling. Indeed, risks themselves cannot be eliminated, therefore taking risks intelligently and controlling their exposures efficiently, offers opportunities (Meulbroek 2001). Nevertheless, the ultimate objective of ERM is to bring and maintain a balance in the business; maximizing returns whilst meeting the expectation of **stakeholders'** (i.e. creating sustainable value) for a longer-term time horizon. Indeed, this is much broader than purely silo thinking, for instance, just focusing on the financial goals of risk management<sup>19</sup>.

### ***Benefits of ERM***

The literature reported a number of benefits of ERM. Firstly, the firms who have implemented an ERM program enjoy a long-run competitive advantage over those that manage

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<sup>17</sup> The report is available from [www.munichre.com/publications/302-05241\\_en.pdf](http://www.munichre.com/publications/302-05241_en.pdf) [accessed on 18 December 2009]

<sup>18</sup> It entails (i) a consistent perception of risk within the organisation in terms of achieving the corporate objectives; (ii) the attitude of holding risk ownership – **not for 'them' but for 'us'**; (iii) seeking opportunities out of risk in addition to its downside implications; and (iv) an open dialogue across the organisation.

<sup>19</sup> Froot et al (1994) suggests, "**A risk-management program, therefore, should have a single overarching goal: to ensure that a company has the cash available to make value-enhancing investments**".

and monitor risks departmentally. This argument is in line with **respondents' in the original** study beliefs that, by measuring and managing risks consistently and systematically, and ensuring the timely communication of risk related information across the enterprise in a transparent manner, the business managers can optimize the tradeoff between risk and return. Such initiatives ultimately strengthen the ability of an organisation to carry out its strategic plan (Nocco 2006).

In summary, ERM is an ongoing process as the environment in which the organisation operates constantly provides new risks over time. Consequently, new strategies need to be developed to prioritise (i.e. risk profiling or landscaping) and manage them. ERM is believed to be an effective management system with four broad characteristics as suggested by Shank (1995). First, it sets specific, achievable targets in line with the **organisation's** risk appetite, based on which its performance can be measured. Second, it provides the design of an operational **strategy for achieving the targets in terms of organisations' culture within the multidisciplinary** environment. This requires meaningful communications of risk information across the organisation. Third, it focuses proactively<sup>20</sup> on understanding the root causes of risk rather than the implications of risk. Finally, the design of ERM rewards high-quality decision-making, which ultimately ensures superior results. In essence, ERM gains the attention of the insurance industry as a corporate strategy<sup>21</sup> to increase shareholder value, in addition to protecting against financial failure. Despite the recent advancements, it is observed in the original study that the field of ERM still suffers from a lack of theoretical development, which is necessary to

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<sup>20</sup> Proactively - meaning the enterprise risk can be identified in advance and resolved quickly.

<sup>21</sup> A road-map that indicates the way of achieving corporate objectives.

guide its multidimensional applications. The above discussion confirms that ERM literature is severely lacking in demonstrating and quantifying its performance. In addition, any performance measurement framework of ERM should include the four broad characteristics of value creation discussed above.

The study of literature reveals that ERM is currently passing through a transitional period. The **respondents'** in the original study were seen to be confident about the capability of an ERM system in optimizing shareholder return and increasing the value of an organisation. Essentially, ERM creates value at both macro (enterprise-wide) and micro (business-unit) levels. At the macro level, ERM creates value by enabling senior management to quantify and manage the risk-return tradeoff that faces the entire firm, while maintaining access to the capital markets and other resources necessary to implement its strategy and business plan.

### ***o s s            n e m initiatives of regulators and rating agencies***

The literature review reveals the existence of no single model that includes all the general characteristics of ERM as discussed above, which are essential to fully measure its performance. However, the current initiatives of regulators and rating agencies in assessing **insurers' solvency and** the resulting financial benefits, may guide the development of such a multidisciplinary model. These initiatives are important in capturing market developments on the research topic and are discussed briefly in the following paragraphs.

**As described earlier, the literature on measuring insurers' performance focuses mostly on the financial perspective. However, the original study reveals a change in insurers' risk**

management practices due to the recent movement of regulators [and rating agencies] towards providing risk-based regulations [risk concentrated rating methodologies]. Indeed, this is an issue of changing organisational culture in the way it perceives risk and business management **as a whole. The recent movement of regulators and rating agencies in assessing insurers'** solvency and financial strength respectively, introduced a paradigm change in insurers risk management practice. In essence, most rating agencies are in the process of developing their approach to ERM as a 'rating criteria' and its implementation is targeted to follow in next couple of years. The four major rating agencies (i.e. S&P, A.M. **Best, Fitch, and Moody's**) have published documents which explain their methodologies for assessing the strength of ERM in insurance companies and are used in the process of deriving their credit rating decisions. For instance, the criteria used by S&P to assess the credit quality of an insurance company are traditionally

(Ingram 2005). The results of this evaluation are then utilised to determine the quality of an insurer's ERM.

**In summary, the above initiative of S&P towards measuring insurers' financial strength** focuses on three key issues – loss/profit; investment performance and management capability. Essentially, the loss/profit, which comes under income stream risk, is a general managerial consideration. On the other hand, investment performance is associated with stock-market risk and directly related to the concern of shareholders. Finally, the management capability, which provides direct input into strategic decision making, is a source of strategic risk for the organisation (Miller 1990). However, the strategic risk is also a concern of multiple external stakeholders, in particular, regulators, rating agencies and financial analysts. S&P believes that the real opportunity (e.g. the **diversification benefit**) of ERM depends on insurer's capability of managing its strategic risk. In essence, the S&P criteria, which itself is multidisciplinary<sup>22</sup>, provides a solid base for measuring the performance of insurers' ERM programs. This supports the integration of financial management and strategic management when assessing the performance of ERM, as proposed in this article.

On the regulatory side, insurance regulators in the EU<sup>23</sup>, USA<sup>24</sup> and Australia<sup>25</sup> have adopted a risk based approach (McCarthy 2006) to the assessment of insurer solvency. The Financial Services Authority (FSA) in the UK has introduced Individual Capital Adequacy Standards (ICAS) in line with Solvency II proposals (Tiner 2006). The design of principle based

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Solvency II is based on a three CSF structure that is similar to Basel II<sup>26</sup> as adopted in the banking sector. The first CSF refers to the setting of minimum capital requirements and requires regulated insurance companies to calculate their capital requirement using either a standard formula or an internal model. The second CSF requires the insurers to assess their own capital need, commensurate to the risks to which they are exposed, and maintain that capital subject to supervisory review. The third CSF binds the insurers to publicly disclose key information on its risk and capital adequacy. Following the initiatives of the EU, Switzerland has introduced solvency tests for Swiss insurers<sup>27</sup>. In addition, the International Association of Insurance Supervisors<sup>28</sup> (IAIS) is now working on a major project to formulate a consistent, reliable and transparent approach to the assessment of insurer solvency. The key focus of such initiatives is on adequate capital requirements and supervisory review (under host country **regulations**) of **insurers' subsidiaries operating in different jurisdictions**. Clearly, emergence of a globally consistent approach for solvency regulation suffers a number of difficulties in terms of technical, economic and financial matter (Schmeiser 2004; Swiss Re 2006; Trainar 2006). In **summary, the regulators recognize that good risk management can increase insurers' business efficiency and profitability at the group level** (Bies 2006; Wilson 2006). **The "use test"** of Solvency II **requires that insurers'** internal risk measurement models, which will be utilised to establish the level of regulatory capital, should play the central role in its strategic decision making. It means that regulators expect insurers to take a holistic view of risk in running the business, which in effect is the ultimate purpose of ERM.

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Indeed, a comprehensive discussion on insurers' risk management within the context of Solvency II (coming into effect in 2013) is beyond the consideration of this article. However, the key point to be noted from this development is that insurers' risk management is a multidisciplinary topic, where the integration of financial management and strategic management is significantly highlighted.

### ***A review of performance measurement literature***

As stated earlier, the underlying assumption of the value creating capability of ERM suggests that ERM supports a **firm's growth**. Consequently, it is understood that the holistic performance of a firm is aligned with the performance of ERM and vice versa. From a holistic perspective this alignment can best be studied with the integration of financial management and strategic management literature. However, the literature does not provide any such integrated framework. The following paragraphs explore the issues relevant to the structure of an integrated performance measurement system.

It is understood that the primary goal of performance measurement is to assess the progress of achieving corporate objectives (both financial and non-financial). In addition, the output is utilised to allocate resources appropriately throughout the organisation (Christopher 2003). However, there remain differences across disciplines in measuring the performance of an organisation. Hansen (1989) suggests two major streams of researcher within the business **policy literature in determining firms' performance**. In this context, one thought emphasises the economic factors focusing on the external market from a financial perspective. Whereas, the other thought emphasises the organisational factors, stemming from psychological and sociological perspectives. Berman (1999) compared the descriptive accuracy of the strategic stakeholder management model and stakeholder commitment model, focusing on the

organisational factors. They found that stakeholder relationship is a key influencing factor for firms' strategic and financial performance. This indicates that the economic factors and organisational factors are closely linked where measuring the performance of the firm is concerned. Consequently, the research studies the performance measurement of ERM from both financial management and strategic management perspectives.

## **FINANCIAL MANAGEMENT**

In finance, risk is defined as the variance of return, which is considered as the reward for investment. From a financial management perspective, the primary task of management is to maximise returns to shareholders (Bartram 2000; Black 2000; Doherty 2000; Fatemi 2002). A **company's market value is based on the net present value** (NPV) of future cash flows arising from its activities and the risks associated with them. In financial management, risk management means the maximisation of the value of the firm arising from volatility, which is inherent within **firms' business environment** (Hunter 2002). Although minimizing the volatility of future cash flows generated by assets is too often practiced by most financial managers, uncertainty (with higher volatility) often creates opportunities to progressive firms. In financial management, three key elements of value creation are: financial flexibility, efficient capital allocation and leverage of operational flexibility (Leautier, 2007). It is assumed that the financial

discounting future cash flows generated by the assets. The assumption is that investors are willing to pay only for the systematic (non-diversifiable) risk which is correlated to the market and they can diversify or neutralise the unsystematic (firm specific) risk by holding a portfolio of stocks. The Capital Asset Pricing Model (CAPM) suggests that the increase in the systematic risks of a portfolio of assets increases the cost of capital thus decreases the value of the firm (i.e. the discounted sum of its future cash flows). This is because of the reward for holding systematic risk is proportional to the beta of the portfolio of assets. From a financial management perspective, the firm always tries to operate with a lower cost of capital to generate more value for its shareholders.

Several performance measures e.g. Shareholder Value Analysis (SVA), Economic Profit (EP) and Economic Value Added (EVA) were developed to assess how much value a firm creates from its economic activities<sup>29</sup>. However, these were criticised because of their overdependence purely on financial outcomes and the exclusion of strategic, operational and ethical issues **including firms'** social and environmental responsibilities (Carroll 1979; Cornell 1987; Clarkson 1995; Feurer 1995; Hillman 2001; Orlitzky 2003).

## **STRATEGIC MANAGEMENT**

Theoretically, the concept of business performance is at the centre of strategic management<sup>30</sup> (Venkatraman 1986). Unlike financial management, the strategic management **literature views risk (preferably uncertainty) as the lack of achieving firms' corporate objectives.**

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<sup>29</sup> The technical detail of these methods falls outside the scope of this article.

<sup>30</sup> A process for senior management to ensure their firms' long term sustainability in the corporate environment.

It encompasses the risk associated with organisational complexities surrounding the risk taking and decision making issues by managers. The belief is that lack of managing internal organisational complexities adversely affects the achievement of corporate objectives, independent of external capital market performance. It is argued that most management theories (e.g. decision theories) either implicitly or explicitly address the area of performance measurement because performance is seen as the true test of any strategy (Bourne 2002). However, the criticism is that the emphasis is on subjective issues (i.e. customer preference, employee satisfaction etc.) **rather than firms' financial outcomes**. In essence, both approaches (financial management and strategic management) are correct but they are too narrow in scope remaining within their disciplinary boundaries (Kirchhoff 1977; Capon 1990).

A detailed discussion on the position of risk within financial management and strategic management is not included in this study<sup>31</sup>.

In view of the varying degrees of understanding of risk within financial management and strategic management, the challenge is the alignment of these two theoretical understandings in a common framework. This inequality provides an unclear picture of organisational performance (Gunasekaran 2004). It is important to understand that whilst financial performance measures are important for strategic decisions and external reporting to shareholders, the control of day to day operations and functions is often better understood with

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However, interested readers are recommended to read chapter 2 of Doherty (1985) and Bromiley (2001) respectively.

non-financial measures (Maskell 1991), to address the issues concerning other stakeholder groups.

Consequently, for effective performance measurement and improvement, the risk management goals must align with the organisational goals and metrics. Knight (1997) argues, **“Performance measures are helpful in managing the business when they accurately** capture the [multidimensional] issues influencing the decisions that managers are being asked **to make”**. The balance between different business risks and functions can be achieved by identifying and aligning the common characteristics of operational and strategic decision making factors across the organisation in terms of its overriding corporate objectives.

Beamon (1996) suggests four characteristics of an effective performance measurement system (PMS), which can be used in evaluating its effectiveness. They are: inclusiveness, universality, measurability, and consistency. From this viewpoint, a performance measurement technique should have the ability to measure all relevant aspects of the system. In addition, the result should be tested under various conditions. Moreover, the robustness of a PMS depends on the quality of the required data, which should be measurable and consistent with **firm’s** corporate objectives. According to Feurer (1995) a PMS should include components for evaluating the internal and external environments of an organisation. In addition, it should consist of devices to identify the driving forces influencing the current situation of the firm and the correlations that exists between these forces. Moreover, projecting the future trends of the business including the resulting implications for the organisation are vital issues for a PMS. Furthermore, the output of a PMS should guide the senior management in deciding an **organisation’s future goals**, including indications on the likelihood of achieving them. Besides

these requirements, a PMS should allow the reward of achievements within the organisation, which in fact acts as a vehicle for promoting a culture of risk awareness across the organisation. Clearly, such a structure of PMS can only be designed by aligning the goals of individuals and business divisions with that of the organisation as a whole (Kerr 2005). However, the time<sup>32</sup> of measurement is an important issue because the elements of the system are dynamic, in line with the changing economic environment (Neely 2002).

### ***The scope for integrating financial and strategic views of risk***

The key function of strategic management is to evaluate the internal resources and skills of an organisation (which are mostly intangible in nature) and then map these into the risks and opportunities created in the external environment during its business operations. The objective is to satisfy the needs of the stakeholders of the firm.

The research on risk by strategy professionals is diverse and less coherent compared to that found within financial management. Whilst **financial management works with firm's tangible assets**, **strategic management focuses on intangible assets that are driven by people's emotions, desires, attitudes, and irrationalities**. The contribution of strategic management literature to risk research is the inclusion of ethics as an influential element of either high or low risk taking by managers (i.e., sources of an agency problem). The strategic management literature claims that good ethical practice is an essential element of reputational risk management. It is evident that managers do not solely depend on the quantitative model outcomes in their decision making. Instead, they use mental models and use their expert judgment, which is a conclusion of

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<sup>32</sup> This, in turn, is associated with the concept of the 'time value of money'.

prospect theory (Ruefli, et al 1999). However, what constitutes managerial judgment is a topic in the research of strategic management.

One of several areas where both finance and strategy researchers have interest is 'managerial remuneration', which is regarded as a risk mitigation tool to combat inappropriate risk taking by managers. The evolution of corporate governance as a separate discipline is a direct output of the integrated effort of financial management and strategic management research. **The evaluation of the causes of risk where strategists' like to focus ex-ante**, provides a fundamental difference between these two disciplines (financial managers focus on ex-post i.e., consequences of risk).

The following section develops a framework for measuring the performance of ERM whilst considering the above results and discussions.

### **SECTION 3: FRAMEWORK FOR MEASURING THE PERFORMANCE OF ERM**

The objective of this article is to propose a framework to measure the performance of ERM. It is clear from the above discussions that in addition to integrating the theoretical issues of financial and strategic factors, the framework should consider ongoing market developments. In view of the understanding derived from the above discussion, the following framework to measure the performance of ERM is proposed.

**[Insert Figure 1 here]**

## **KEY ISSUES OF AN ERM FRAMEWORK**

As discussed earlier, ERM in practice is about managing those risks which are most critical to the survival of the firm. However, it can be difficult to identify the most threatening risks as the nature of risk is dynamic (the frequency and severity changes over time). Put simply, **today's less threatening risks may evolve into tomorrow's most threatening risks. By using risk modelling and forecasting techniques, ERM provides a framework to track the development of risk over time. It is assumed that ERM supports firms' growth strategies.** The initial task of ERM is to provide a comprehensive contingent framework, where risk taking is consistently encouraged in a competitive market-place, controllably within the risk capacity (appetite or tolerance) of the organisation. Consequently, the performance of ERM should be aligned with the performance of the firm. The key challenge here is to ensure that a risk management culture is embedded within the decision making processes of the whole firm, and at least within those of the top level management. This mostly depends on how people and policy makers within the firm perceive or understand the business, its risk capacity, the strategic objectives and the risk associated with proactively achieving them. Indeed, all these factors are interrelated and the development of a common language for understanding them is essential for the development and implementation of ERM.

A number of academics (D'Arcy 2001; Dickinson 2001; Harrington 2002; Harrington 2003; Liebenberg 2003; Power 2004; Dickinson 2005; Mikes 2005; O'Donnell 2005; Acharyya 2006; Nocco 2006) and practitioners (Miccolis 2001; Casualty Actuarial Society 2003; Moeller, 2007; PricewaterhouseCoopers 2004; Shimpi 2005; Ingram 2006) proposed a conceptual framework of ERM. In summary, the framework consists of (i) identification and profiling of significant risks (i.e. financial, operational and insurance risks); (ii) modelling of risks; (iii) **measuring of risk;** (iv) **determining firms' risk appetite;** (v) transferring/financing/hedging risk; (vi) deploying (allocating) [economic] capital; and (vii) measuring of performance (i.e. economic profit) including the benefit of risk diversification; and monitoring the execution of the entire process (Price Water House Coopers 2004). In order to implement this ERM framework, management needs to employ a combination of quantitative and qualitative techniques as not all risks are numerically quantifiable<sup>33</sup>. In practice, this is perceived as the integration of risk management and corporate governance. Moreover, this process involves people and organisation, where the intangible issues, (i.e. mentality/psychology of those involved, culture of the organisation and market economics) play a dominant role. Consequently, the building and execution of an ERM framework needs the convergence of

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<sup>33</sup> It is assumed that statistica93(i)ec/nmiu ar27(o)-5jnet r223(i)-7(s)6krs65ibetther213(-)-3thao quisuct/i ar27(o9(x)9(i)-7(ma)04(ti57(o)-5n(s65i))-3me)7((

several academic disciplines, including economics, finance, [strategic] management, psychology, and sociology (Acharyya 2006a).

It is clear that the type of performance measures required for ERM should be directly **related to organisations' strategic goals**. Moreover, the outcomes of ERM should provide information to enable the formulation and successful delivery of appropriate corporate strategies. In order to employ ERM as an effective management system, the performance of ERM should provide feedback for the cognitive and behavioural learning processes of the organisation, in addition to delivering tangible value for the organisation.

Clearly, a single performance measurement system (i.e. financial or operating) seems inadequate since it is not inclusive, and ignores the interactions between the elements of ERM. Moreover, it ignores critical aspects of organisational strategic goals. Additionally, it is difficult for a single measure to provide a clear performance target on the critical areas of business (Kaplan 1992). As found earlier, the challenge is to link the financial components to the operational components within this single framework. In essence, an ERM performance measurement framework should utilise relevant literature from a number of fields including finance, accounting, operations management, marketing, strategy and organisational behavior (Neely 2002).

In this study, ERM is seen as the information system, which enables the organisation and the associated parties, in particular the regulators and rating agencies, to measure the strength and weakness of an entire business. In addition, the performance of ERM, which

considers all significant risks of the business, partly depends on how the risk related information is amplified, communicated and deployed throughout the organisation.

## **DESCRIPTION OF THE FRAMEWORK**

The framework as shown in Figure 1 provides three key Critical Success factors (CSF) upon which the performance of ERM needs to be focused.

### CSF 1: strategic effectiveness

This first CSF concentrates on the strategic efficiency of ERM. This is built on the organisational ability of aligning risk with strategy. The key consideration here is to evaluate whether the components of risk (i.e. threat and opportunity) are adequately considered by the top management (including the board of directors) when taking strategic decisions (e.g. takeover bids, expansion into other ancillary business areas, etc.). From the risk and decision making perspective, ERM is essentially a top-down process. The original study revealed that successful ERM initiatives originated and progressed through the genuine commitment of top management within the firms. Consequently, the commitment of the board of directors and executives towards considering risk management issues in their decision making is a key indicator of ERM. Moreover, realistic corporate objectives must be built on the basis of the **enterprise's risk appetite and risk profile**, where the **entity's risk-awareness** culture holds a significant role to play. Sir David **Walker's** recommendation for a high-level risk committee (in addition to an audit committee) to support the board of directors on the risk matters of an

entity, is a significant indicator of strong ERM<sup>34</sup>. In addition, the presence of a chief risk officer (CRO) to accumulate enterprise-wide risk information and present this to top management with recommendations, is vital for effective ERM.

In addition to the commitment of top management, it is important for the performance evaluation of ERM to know if the top-management hold enough experience and possess the qualifications necessary to understand the cause and implications of **firms' risks**. Such organisational factors are recognised **within S&P's ERM criteria as discussed** earlier. Since ERM is developed to align risk and strategy, it is assumed that the reality of the ever changing market (both internal and external) should be reflected in the corporate objectives of the firm. The original study revealed that the inclusion of this environmental component of risk is challenging but beneficial to establishing successful ERM.

A comprehensive policy towards and the level of an entity's **available resources** (e.g. capital, wealth, reserves, etc.) in proportion to its enterprise risk, is a prerequisite of a robust ERM system. This is one of the areas where the integrated effort of financial management and strategic management is necessary. **As a manager of investors' wealth**, service provider to customers (e.g. policyholders), principal of agents (e.g. employees) and steward of the society, the overriding objective of the enterprise is to contribute towards the universal system of optimal allocation of resources. This works to advance **individuals' lifestyle** and create value throughout the wider society. The moral duty of the entity to safeguard the interests of the

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<sup>34</sup> Interested readers are recommended to read **Walker's review on "A review of corporate governance in UK banks and other financial industry entities: final recommendations"**. **The document is available from** [www.hm-treasury.gov.uk/d/walker\\_review\\_261109.pdf](http://www.hm-treasury.gov.uk/d/walker_review_261109.pdf) [accessed on 18 December 2009]

stakeholders, depends on its ability to save the firm from short-term volatility (including surprises), whilst simultaneously supporting the **firm's long**-term sustainability. The ultimate purpose of solvency regulations (i.e. capital adequacy) is based on this broader understanding and ensuring this quality is a prerequisite of ERM.

The original study revealed that large organisations hold complex structures and that risk increases with the level of organisational complexity. In the face of the heterogeneous characteristics of risk, it is important for ERM to develop a common language of risk across the organisation. The literature suggests that ERM is an enterprise-wide management function which deals with several kinds of risk in order to achieve a single set of corporate objectives. Consequently, it is essential for ERM to ensure it operates with a single definition of risk (at least for the broader organisational issues), obtaining input from appropriate divisions and subdivisions across the spectrum of business functions. This common language should be reflected in the **entity's** risk policies and procedures being utilised to accumulate risk information, determine responsibilities and allocate **resources, including manager's pay** incentives, for a long-term time horizon.

## CSF 2: operational effectiveness

The second CSF emphasises the operational efficiency of the firm. It concentrates on the efficiency the firm needs to position itself in the market and successfully deliver strategy using limited resources as discussed in CSF 1. These operational issues are market driven and greatly depend on the available people, systems, tools and technology of the entity. Consequently, the

optimal use of these resources and the utilisation of suitable tools and techniques are necessary to deliver the strategy in a competitive marketplace.

People inherently behave irrationally and managers should consider human perception and subjectivity towards **risk (i.e. individuals' risk attitudes)** in their analysis and evaluation in decision making. Relying solely on expert judgments without the support of adequate factual evidence and vice versa, may lead to incorrect managerial decisions and cause failure to achieve corporate objectives. Additionally, the original study found that a good strategic decision, if not implemented properly due to misjudging its risk-return trade-off, may harm the overall performance of the enterprise.

Moreover, particular systems and tools contain both strengths and weaknesses. Misjudgment in selecting the right tools and techniques and applying them within the right system may produce risks (e.g. model estimation error). Such risks may be escalated by the unwillingness or indeed dishonesty (fraud risk) of managers to report resulting project failures. Consequently, it is a prerequisite for ERM to justify the extent to which managers take the enterprise-wide perspective in choosing tools and techniques for their analysis and evaluation.

The original study found that the adequacy, quality and reliability of data utilised to develop and validate risk models are very sensitive issues for delivering successful ERM. It is revealed that relevant data, including proper data capturing and storage methods are unavailable for some categories of risk (e.g. operational risk). Managers who are expert in financial modelling, struggle to model and measure such risks due to these operational problems. In some cases, operational risk contributes towards a major part of an **entity's risk**

profile, where insufficient knowledge exists. This is a challenging and underdeveloped area where future risk research should focus.

Risk affects the firm holistically and correlations amongst risks exist. In buoyant times the correlations amongst risks remain hidden but they rise to prominence in the form of systemic risk during catastrophic events or periods of crisis (e.g. 2007 financial turmoil). By nature, risk is dynamic and ERM should have built-in policies and procedures to proactively detect emerging risks and provide the necessary precautions to protect the firm from total failure. The monitoring capability of the firm towards risk accumulation and the effectiveness of the action plan, including risk diversification, to overcome the combined effects of correlations, are essential in evaluating the performance of ERM. In addition, the robustness of an **entity's** crisis management strategy, in order to enable business continuity and ensure survival, is a prerequisite of successful ERM.

### CSF 3: reporting effectiveness

The third CSF is related to the reporting efficiency (i.e. disclosure) necessary to meet the expectations of the stakeholder community. This, at the macro-level, makes managers accountable in justifying the corporate strategy and objectives that the firm committed to and what has actually been delivered to fulfil the commitment. This is one of the key areas where organisations build or lose their reputation, in turn affecting shareholder value. Additionally, this leads into the broader area of stakeholder relationship management where short-term financial results and long-term strategic objectives (sustainability) intersect.

As discussed earlier within the section “**the ownership of risk**”, **three types of risk** professionals (i.e., risk takers, risk owners and risk observers) work in the internal and external environment of the organization. The risk takers, as the first line of defense, are primarily responsible in taking risks for the organisation according to the approved criteria and limits as discussed under CSF 1. The risk observers, who fall under the second line of defense, are responsible for controlling excessive risk acceptance by

etc.) to secure opportunities. The robustness of such techniques is a key consideration when measuring the performance of ERM.

An **entity's internal risk register** and the evolution of risk-based accounting regulations (e.g. IFRS) provide guidelines on how to store and share enterprise-wide risk data. The recent move towards harmonisation of capital adequacy regulations with international accounting regulations is another example of preserving information and reporting risk data to stakeholders. The robustness of ERM depends on how the entity registers, shares and reports risk sensitive information to both internal and external stakeholders. In addition, the **entity's** capability and level of transparency in communicating both its short-term and long-term threats and business opportunities to key stakeholders, is a key consideration in measuring the performance of ERM.

#### **SECTION 4: JUSTIFICATION OF THE FRAMEWORK AND CONCLUSION**

As a financial intermediary, insurance companies risk management, traditionally focuses on the financial perspective of risk. This is to satisfy the key stakeholders e.g. providers of capital (i.e. shareholders) and the buyers of their products (i.e. policyholders). The aim of this paper is to propose a multidimensional framework of measuring the performance of ERM. The framework developed in this study places more emphasis on the effectiveness of ERM in a broader sense

recognise the social value created by insurers. It is only in a crisis situation, where the entire economy is severely affected (e.g. 2007 financial crisis) that the market and regulators talk about the broader social responsibility of the financial organisations.

**The argument suggesting “creating shareholder value is the ultimate [only] goal of ERM”** is based on the assumption that there are no other stakeholders in the firm, except the shareholders. However, such a statement considers that all markets are perfectly competitive, which is itself controversial in financial economics literature. In reality, the interests of stakeholder groups conflict and the underlying assumption within financial economics literature suggesting market efficiency is not truly evident in the area of ERM. Consequently, a performance measurement system based on a single disciplinary view does not appropriately fit within the scope of an ERM framework addressing the needs of multiple stakeholders. **Jensen argued, “a firm cannot maximise value if it ignores the interest of its stakeholders”** (Jensen, 2001). This justifies the need for risk to be integrated into the planning, budgeting, reporting and forecasting functions across the organisation (Cotter, 2008) involving the interest of all key stakeholders, which the proposed framework reflects.

In contrast to producing value only for shareholders, the proposed framework emphasises **the fulfilment of stakeholders’ expectations. It is argued** that because ERM takes a holistic view of risk, which involves multiple stakeholders, the key beneficiaries of ERM are policyholders, employees, rating agencies and government, in addition to shareholders. Although the framework seems theoretically logical, its implementation is highly complex, due to the heterogeneous conflicting interests of the many stakeholder groups, in the performance of the

firm. For instance, the shareholders would be much happier if the organisation ran with zero capital. In contrast, policyholders want to see a substantial amount of technical reserve on **insurers' book of business**<sup>35</sup>. Notwithstanding, the proposed framework, supported by evidence from the original study, is in line with the expectations of regulators and rating agencies.

The framework highlights that **insurers' risk management ability will be** determined on various issues i.e. early detection of emerging risks and their potential consequences for the organisation; the accuracy of estimating the amount of risk that an insurer can realistically absorb given its business model with respect to the market; and the strength of its risk offloading capabilities (through risk transfer and financing techniques).

In essence, the objective of risk performance measurement is to measure the degree of organisational control, in the face of risk-taking functions that a firm establishes in steering its business. The objective of ERM is that an organisation takes risk intelligently, in a controlled (or balanced) way so that the business is viable for the longer term, whilst still meeting the conflicting (and often short term) expectations of the stakeholders. The proposed framework reflects the significance of the four components of the CSF model discussed earlier.

The paper takes empirical findings from the insurance industry and generalises them within a stakeholder model to develop a framework for **measuring firms'** ERM performance. Indeed, although the relationship of the management with investors and customers is unique within the insurance industry in terms of the availability of capital, the principles of measuring the performance of ERM as proposed in the framework, can be applied to any industry. The study concentrates on **organisations'** social responsibility above its profit maximisation goals. This is purely a theoretical argument. However, the concept of social value creation contradicts

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<sup>35</sup> This argument leads to the fact that neither approach (i.e. **policyholders' satisfaction** or **shareholders satisfaction**) automatically subsidises the creation of value of their counterpart.

with the concept of shareholder value maximisation. In the economic world, the act of an

from the strategic perspective, should be measured on **the entity's** ability to manage its risks, which is further reflected in the success or failure of achieving its corporate objectives.

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Issues

Critical Success Factors

Key Performance  
Indicators

Prerequisites

Aligning risk and  
strategy:

How efficiently is  
risk embedded  
within the  
decision making  
processes of the  
firm?

Effective communication:

How efficient is the management in maintaining the relationship with its internal and external stakeholders?

3. Reporting efficiency

- Transparency
- Accountability
- Risk sharing
- Risk strategy
- Role and responsibility

Coordinating risk information to risk takers and risk owners by risk observers

Promoting appropriate risk taking with adequate control

Harmonisation of risk documentation, encouraging the

