In Measuring the Benefits of Enterprise Risk Management in Insurance: An Integration of Economic Value Added and Balanced Score Card Approaches

Dr. Madhu Acharyya

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Abstract

Risk is inherent to all functions of a business. Enterprise risk management (ERM) is for the measurement and the management of all significant risks of the business holistically irrespective of types and sources. Consequently, the portfolio of enterprise risk includes both objective and subjective elements. Two key benefits of ERM—i.e., shareholder value creation and securing competitive advantage—have been derived from the empirical study. The traditional financial approach, e.g., Economic Value Added, was found inadequate to measure the performance of ERM. The Balanced Score Card is adopted to identify the other value drivers of the firm and framing appropriate communication strategies. Finally, a conceptual framework of measuring the benefits of ERM has been proposed. The study offers significant advances in the current debate on the performance of enterprise risk management, in particular, minimizing the existing gap between the academic understanding and practitioners' experience on the topic.

1. Introduction

Risk management is the key function of insurance companies. The ultimate objective is to value creation for the organization. Traditionally insurers' risk management is done in silos. It is realized that unless several silo risk management techniques and approaches are not aggregated into a holistic framework at the corporate level, the overall purpose of risk management may not be achieved; even certain risk management strategies and functions deliver segmented values. Enterprise risk management (ERM) is a system to measure and manage all complex risks regardless of sources and nature while ensuring the protection of the firm from imminent dangers or crisis (i.e., insolvency). In recent days practitioners and academics have shown growing interest in ERM. It is revealed that the previous studies are limited to define, design and, in several ways, implement ERM. However, the effectiveness of ERM still remains untested because of the lack of a suitable framework and technique. Moreover, the efforts of integrating the corporate risk management approach with corporate governance issues in a coherent ERM framework have added further complexities.

Although a lot has been done to design and implement ERM, not enough effort has yet been made to produce tangible evidence of the benefits of ERM rather than accepting it on faith alone.

The objective of this study is to propose a conceptual framework of measuring the performance of ERM. Theoretically, the performance of ERM aligns with the performance of the entire organization, which is derived to the extent of which an organization achieves its corporate objectives. The shareholder model of risk management is well established in the finance discipline. However, little research has been done to study the requirements of stakeholder model in the area of risk management. Nevertheless, there appears to be a growing attention to managing the risks of the organization for the interest of stakeholders. It would be a good starting point to progress with the assumption that shareholder value creation is the ultimate objective of ERM. However, shareholders are not the only group that influences and has interest in the performance of the firm. Other stakeholders (e.g., employees, who tide-up their human capital with the performance of the organization) haves role in the value-creating process of the organization. The article moves forward from the shareholder value model of risk management to the stakeholder value model. Alternatively, the focus is to expand the study of risk management from a financial perspective to a multidisciplinary perspective.

This article is based on author's original Ph.D. work on ERM, where five dimensions of ERM—(i) evolution; (ii) understanding; (iii) structure; (iv) challenges of implementation; and (v) performance—of four major European insurers were studied. While picking up a significant output of the previous research, it is argued that ERM adds *shareholder value* and offers *competitive advantage* to insurers in achieving superior ratings and compliance with solvency regulations. The underlying belief of this study is that, in addition to fulfilling the economic responsibility to the investors and the policyholders (i.e., customers), it is equally important to fulfill the legal responsibility to the government, the law and the ethical responsibility to the society in order to achieve sustainable long-term value for the organization. Although the literature suggests various performance measures, there is no single tool which measures the economic, legal and social responsibilities of an organization in one framework. The article will

intend to explore the link between two performance measures: economic value added (EVA[1]) and balanced scorecard (BSC) under insurers' shareholder value framework. The criticism of EVA is that it is designed to measure only the financial performance of an organization while ignoring the non-tangible assets (i.e., customer satisfaction). In contrast, the BSC considers both tangible and non-tangible assets including their interrelationships. Nevertheless, there are several overlaps between EVA and BSC in terms of their basic philosophies, organizational breadth and scope as performance measurement tools.

1.1 Structure of the Paper

The paper includes four main sections. In Section 2, the concept of ERM is established. Thereafter, the economics of insurance is overviewed. After that the methodology and empirical results are discussed in Section 3. Financial perspectives of value creation and the intangible nature of demonstrating value are introduced in Section 4. It was found that value creation in insurance is different from other financial services firms. The strategic management approach to value is also introduced in this section. In Section 5, the initiatives of regulations and rating agencies towards establishing ERM are discussed. The broader objective of an organization to meet the expectation of stakeholders is also included in the section. Finally, a conceptual framework of the performance of ERM by utilizing the EVA and BSC is proposed.

2. Enterprise Risk Management

All functions of an enterprise are exposed to risk (whatever the source and nature), and it is the inherent desire to capture opportunities out of the risks. In general, enterprise risk is a set of all of an organization's risks, whatever the sources or nature. 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,[2] whereas the Committee of Sponsoring Organizations of the Treadway Commission's (COSO's) definition includes four risk categories i.e., strategic, operations, reporting and compliance.[3] These definitions suggest that ERM essentially needs an integrated view across all risk types and all segments. The financial industry (in particular, insurance and banking) has observed a great movement in risk management development in recent years, which, in essence, reshaped its business models. Ideally, risk management is an integral part of an insurer's business strategy. In fact, risk affects the organization holistically, suggesting that all risks are somehow interrelated to each other. Since it is complex to identify all risks of an organization, mostly because of their attachment with human perception and subjectivity, the recent effort of insurance companies concentrates on identification and management of *emerging risks*.[4] It is believed that emerging risks present more business opportunities than other types of risk.

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[1] EVA® is a trademark of Stern Stewart & Co., a New York consulting firm.

[2] The general criticism of the CAS approach is that it narrowly views risk and overlooks organizational issues that drive the outcome of risk.

[3] The general criticism of the COSO approach is that it overly emphasizes the process rather than the outcome (or fact).

[4] 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' books of business.

In reality, the segments of the stakeholder groups hold inconsistent understanding about the nature of enterprise risk. For example, the capital management perspective focuses clearly on the deployment of more capital on emerging risk (often termed as "strategic risk") and minimizes capital required to cover non-strategic risks in order to capture the opportunity. This is quite different from the perception of underwriting people within the organization. However, it is important to reach into a common definition of *enterprise risk*; it requires a best practice and education of key stakeholders[5] in the insurance industry.

Reviewing the various views and opinions in theory and practice in the literature, the following definition of *enterprise risk* has been adopted for the purpose of this study.

> *In an insurance business, the "enterprise risk" can be defined as the portfolio of all significant risks that arises from the three core functions (i.e., underwriting, investment and finance) including their interactions both in objective and subjective terms at a specific period of time during the operation.*

While one outcome of effective ERM should be a better estimate of expected value and better understanding of unexpected losses, ERM does not eliminate risks. Thus, extreme negative outcomes are still possible, and the effectiveness of ERM cannot be judged on the basis of only the negative consequences. In essence, the role of ERM is to limit the probability of such negative outcomes to an agreed-upon and value-maximizing level (Nocco, 2006).

2.1 The Economics of Insurance

ERM in insurance is a structured approach to analyze risk-return based decision making. The value of an insurance business is created from three core functions—i.e., underwriting, investment and finance. The study makes a boundary of insurers' ERM within these three core functions. One important feature of this understanding is that, although the ERM is targeted to increase the value of a broad range of stakeholders, it still remains very narrow in insurance business. In particular, the ERM of insurance should primarily be targeted to the increase of value of the shareholders and policyholders. Indeed, this could be the criticism of the professionals who want to see the broader benefits of ERM. Although such argument (i.e., stakeholder value perspectives) is respected from a theoretical point of view, it is far from the existing practice and development of ERM in the insurance industry. However, similar to other businesses, the insurance industry should be responsible for the interest of the other stakeholders (i.e., employees, suppliers, society, etc.), but from a practical point of view it is argued that these responsibilities can be performed through maximizing value of shareholders and policyholders. For example, insurance companies can perform their social liabilities through compiling the existing state regulations. The objective of this article is to develop a framework of measuring the performance of ERM in insurance.

It is evident that providing covers for risks with inadequate underwriting and claims controls amplifies insurers' risk exposures. Also, evidence suggests that under-reserving is a key source of insurers' failure. Furthermore, poor internal control of underwriting and reporting risks

[5] A "stakeholder" is defined here as any individual, group or organization that may affect, be affected by, or perceive itself to be affected by the functions of an organization.

across the organization often triggers lack of adequate and consistent communication of data, which in turn directs the insurer toward the misleading and inaccurate reserving calculations. Inadequate and improper re(recto)insurance purchase and failure of re(recto)insurers (a source of credit risks) lead insurers into financial distress. In addition, natural and man-made catastrophes affect the solvency of the large insurers significantly.

Practically, insurers invest most of their reserves and free capital in the equity and property markets, but a sudden drop of equity prices and a downturn in the property values mismatch the asset and liability values (asset<liability). Also, the selection of investment portfolio (an issue risk appetite) provides a major source of risk to insurers.

Traditionally, corporate finance focuses on the valuation issues of the firm using several capital modeling, budgeting and allocation techniques. One of the key difficulties that an insurer's CFO faces is mismatching the statutory financial year and underwriting year. In addition, the insurance liabilities do not have a secondary trading market, and they often have unlimited exposure, which are difficult to predict. Ideally, insurance liabilities include both underwriting and investment risks. From the financial perspective (as opposed to accounting), the key concern is to calculate the cost of capital by taking the market volatility (i.e., risk) and time value of money including the contingency capital.

From the above discussion it is understood that the failure of an insurer is not limited solely in any one function from underwriting, investment and finance. The implication of risk may even trigger from the lack of trust of the policyholders and confidence of the investors, which may causes reputational risk to the insurers. In addition, the competition in the marketplace (as the result of less/inadequate regulations) causes further risks of insurers' failure. Moreover, corporate fraud was recognized as one of the key elements of insurers' demise. Unfortunately, no technique has yet been developed to capture the key risks of insurers as discussed above. The industry has seen the development of Dynamic Financial Analysis (DFA) as a strategic and operating decision making tool by integrating financial and insurance risks. However, DFA was criticized for the inconsistency amongst the developers and users in terms of selecting the parameters of the associated factors, which ultimately triggers the lack of both internal and external (e.g., regulators and rating agencies) confidence. In addition, one should separate that capital modeling (which is believed to be the ultimate output of a DFA project) from the objective of risk management.

Unlike other for-profit organizations, both customers and shareholders hold ownership of capital of the firm. By paying the premium up front, policyholders establish their right on the capital. In addition, policyholders and shareholders have conflicting interests on the capital. Ideally, policyholders want to see the largest amount of capital as reserve in the balance sheet. In contrast, the shareholders like more dividends, thus leaving least possible capital in the balance sheet. Such conflicting interests bind the insurer to create value for both policyholder and shareholders in order to sustain in the business.

3. Methodology and Empirical Results

The data to measure the benefits of ERM has been drawn from the interview survey of the original study on the practice of ERM in the insurance industry in 2006. An inductive research approach was adapted in the original study to identify key issues of ERM. The initiatives of four major global European insurers (hereinafter referred as "CASES") were studied for this purpose.[6]

The analysis of data finds that no technique has been developed to evaluate the benefits of ERM in the CASES for the specific use of management and internal decision making purposes. Similarly, the evaluation of companies' performance by key stakeholders (i.e., credit rating agencies, financial analysts and regulators) is generally considered as a crude benchmarking criterion. The analysis of interviews finds that the execution of ERM is complex, time-consuming and costly. This is because ERM depends on the company's specific business model (retail or wholesale), its culture, the depth of knowledge of its staff in handling risks and also the size of the organization. Organizations having less (or more) volatile profit streams have less (or more) structured ERM systems in place, because the driving forces of ERM are different from one CASE to another. In addition, the effort of reinsurers towards developing ERM is seen to be greater than that of primary insurers because of the distinctness of their risk profile and business model. In theory, poorly performing firms may seek risky investments (Bowman, 1982). Consequently, the benefits of ERM are seen as uneven across the CASES. For example, one CASE finds considerable benefits in making its investment decisions but another CASE reports benefits in taking cumulative underwriting decisions at the corporate center.

From the findings it is understood that the benefits that managers find while practicing ERM are general in nature. They include improved risk assessment in terms of understanding, identifying and prioritizing risks. Through risk mapping, management has a better knowledge of the critical risks and their potential impact on the company. It is argued that the organization by practicing ERM will be better prepared to manage its risks and maximize its opportunities within the acquisition, product and funding programs. In addition, the practice of ERM could provide a common language for describing risks and its potential effects, which could improve general communication. Better knowledge of risk (in particular, the emergent risks) could enable management to handle them more efficiently and effectively in terms of quantification and modeling; which may help the efficient pricing of risk. The development of risk awareness could mitigate the level of risk, thus requiring less capital, which would ultimately reduce the cost of capital. Above all, the practice of ERM may enable insurers to maintain competitive advantage. In addition, the research finds that industry managers apparently do not see any disadvantages arising from ERM, although the centralization (as opposed to harmonization) of risk and capital management issues in the framework of ERM could cause a systemic failure in the future (Bate, 2006). Similar to the findings of the literature it is revealed in the survey that risk management shows its effectiveness best when things are at their worst. However, when markets are less volatile and there are no surprises, it is more difficult to evaluate the strengths of organizations' risk management policies. Unfortunately, it is often only when unpleasant surprises arise that the effectiveness of risk management policies becomes apparent.

[6] In order to maintain confidentiality, the identity of the CASES and interviewees are not disclosed.

The empirical study noted that the added shareholder value is the ultimate measure of the success of ERM. Indeed, as seen in the literature, there remains considerable debate about the ability of risk management of adding value for the organization. Organizations discuss the potential (intangible) benefits of ERM, but there still remains doubt among the existence of these benefits as they find business opportunities in adopting ERM in the face of imminent danger but they find it difficult to demonstrate the value since the benefits may not be immediately available. It is understood that taking risks intelligently and controlling their exposures efficiently may bring opportunities to the firms (Meulbroek, 2001). In summary, the study concludes that measuring the performance of ERM is complex and hard to obtain tangible evidences.

4. ERM and Value Creation

It is further revealed that the growth of ERM is evolving. In reality, while one group of stakeholders (i.e., regulators and rating agencies) is interested the ERM process (in particular, the quantitative analysis of the internal risk models), the investors (i.e., shareholders) are interested in the value to be created out of the process (i.e., the ultimate outcome). Essentially, ERM creates value at both macro (and enterprise-wide) and micro (i.e., 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 (Nocco, 2006). The execution of ERM requires the introduction of value based management, which instills a mind-set where people within the organization learn to prioritize decisions based on their understanding of the way those decisions contribute to corporate value (Young, 2000). However, it is important to remember that the generation of a high volume of profit does not guarantee value creation for shareholders[7] (Knight, 1997).

It is important to investigate on how risk is defined. In finance, any capital market related incident (or financial activity) that directly influences the cost of capital of the firm is considered as *risk*. If the incident (or action) has a positive outcome (i.e., lowering the cost of capital), then it is considered as a source of *opportunity*. Alternatively, in finance, risk is defined as the volatility of unexpected outcomes within the scope of a firm's assets and liabilities. Indeed, this deterministic view on risk, which is bounded with direct capital market consideration, has many limitations. In reality, there are many factors that indirectly influence the cost of capital of the firm, which are deliberately ignored by such narrow finance view on risk. There remains a chicken and egg debate in the maintenance of the demand/requirements of shareholders and other stakeholders (in particular, customers).

Finance literature suggests at least three separate views on the debate of value creation ability of risk management from the perspective of capital market hypotheses. Firstly, according to the efficient market hypothesis (i.e., Modigliani and Miller proposition, 1958) [corporate] risk management does not add value and even is a value destroying function. In this argument, risk management is considered as a financial transaction (e.g., insurance). It is assumed that the transaction cost associated with risk management is higher than its return. Secondly, managerial

[7] According to Rappaport (1998), a company creates shareholder value only when it earns a rate of return on new investment greater than the rate that investors can expect to earn by in alternative but equally risky securities.

risk aversion hypothesis also predicts that managers (i.e., agents) manage risks at the expense of shareholders (i.e., principal) for their own (i.e., managers') interest while overlooking the interest of the shareholders. Indeed, in the world of no agency cost, risk management theoretically adds value and secures comparative advantage by reducing the probability of lower tail outcomes and simultaneously preserving gains in the upper tail outcomes through effective hedging (Stulz, 1996). However, in the presence of agency conflicts, this proposition may not be true (Tufano, 1998). Thirdly, in the inefficient market hypothesis (i.e., modern financial theories), which is also called as the shareholder value maximization hypothesis, corporate risk management (CRM) protects the net cash flow through minimizing the expected costs of financial distress (i.e., facilitating the continuation of business plans while protecting shortfalls of cash); taxes (non-linearity) and probability of the occurrence of underinvestment problems (Scharfstein, 1993; Froot, 1994). Consequently, this argument suggests that firms' risk management strategies should be in line with the interest of shareholders (Fatemi, 2002). In addition, the management of interest rate risk and foreign exchange risk add value to the firm (Smithson, 2005).

In this discussion it is important to understand the difference between CRM and ERM. In fact, the type of risk associated with CRM and CRM are very different. CRM, which includes the risk of investment only, is merely a subset of ERM. Nevertheless, ERM goes far beyond CRM and necessarily includes the aggregation of significant risks and human psychology. Interestingly, it is also argued that managing ethical risk can add value (Chami, 2002).

4.1 Intangibility of Value

In general, the demonstration of value is a fundamental problem for risk management. From the literature it is understood that the objective of any function, whether risk related or not, is to create value for the firm. In addition, organizations always take risky decisions during their function in the competitive market. Consequently, it is difficult to prove separately that risk management creates value. Here is a practical example. Assume that an organization has continuously paid (fire) insurance premium for the last five years for a property that it owns but made no claim at all in past. How would we view this transaction? Is it just wastage of money? Yes. This is because the organization paid all these premiums but did not make a single claim. In theory, organizations purchase insurance because of risk aversion, and the net present value of the insurance contract is zero (MacMinn, 1987). This leads to a question: Is risk management wastage of money? From the commercial point of view, such a transaction is not wastage of money. Theoretically, the premium represents an option to raise off-balance sheet capital and it is recognized that option has value. The price of this option, which is in effect the annual premium, is marked against the value to the firm. This value should be measured in terms of the opportunity cost of risk. It leads to the argument that the performance of ERM needs to be demonstrated in such a context. Moreover, a part of the value of managing risks is that it opens up further opportunities. For example, the study of declining firms suggests that successive losses rapidly curtail the budget for research and development (R&D) in some firms (Hambrick, 1983; Wiseman, 1996). In essence, the causes of failure (e.g., the loss of property because of the lack of insurance) are compensated/adjusted from the R&D budget. So in this sense, risk management creates opportunities to undertake R&D, and R&D develops new products, new ideas and new markets, which are very difficult to cost or value in monitory terms. This

argument leads to the understanding that an effective risk management gives the organization intangible options to introduce further innovation which is difficult to value.

4.2 Ex-Ante and Ex-Post

Moreover, it can be argued that risk management shows its usefulness best when things are at their worst. In reality, the downside of risk (i.e., loss) lasts for a longer period of time, while the upside (i.e., opportunity) lasts comparatively shorter. Moreover, time is a big issue and risk lasts long but opportunity comes for just a while. When markets are less volatile, and there are no surprises, it is more difficult to evaluate how well an institution's risk management policies are operating. Unfortunately, it is often only when unpleasant surprises arise that the effectiveness of risk management policy becomes most apparent. Consequently, the issue becomes whether to value the performance of ERM ex-ante or ex-post (i.e., before or after the loss) (Bromiley, 1991). In essence, risk management decisions have to be taken in advance without knowing the time of holding the events. Practically, it is difficult to model risk management decisions in advance against future risk scenarios. The finance view of risk as stated earlier argues that risk management reduces financial distress or bankruptcy costs. The above understanding suggests that the modelers should be able to get a handle on that too, because they ought to know roughly what might happen in the future.

In conclusion it can be said that although ERM certainly provides benefits to the organization, the measurement of its performance is difficult. Value creation for ERM is not being demonstrated naturally in a straightforward manner, and the demonstration of this value is a slow process. Instead, meeting the regulatory constraints as a result of the practice of ERM or paying taxes clearly are value added functions. The study indicates that currently organizations have not identified any financial measures that are adequate to measure the performance of ERM. More importantly, timing needs to be considered when measuring the performance of ERM. Consequently, the ex-ante and ex-post aspect of losses is important, which makes a considerable difference in calculating the benefits of ERM. Nevertheless, the ERM system involves the interests of stakeholders, and it is necessary to develop new tools, which can measure their confidence.

4.3 Value Creation in Insurance

Insurance is a leverage business, and the above description of value creation based on the arguments of corporate finance is not perfectly suitable for insurance business (Hancock, 2001). Typically, insurers borrow money from policyholders (i.e., charging premium upfront, which is a type of "debt") and stockholders (i.e., risk capital). As discussed earlier, there are three sources for the value creation activities in the insurance business: underwriting; investment and finance. Insurers underwrite risks to make profits. The underwritten risks are diversified through reinsurance and pooling, and the remaining capital is then invested in the capital market to generate return. However, there are costs associated with borrowing capital (i.e., cost of capital). The fundamental concept of value creation is that the cost of capital must be less than the return earned from the investment. In insurers' economic balance sheets, both the assets and the liabilities represent the market (i.e., economic) value. Although there are secondary markets for the assets, no secondary markets exist for liabilities (i.e., insurance policies). Practically, the cash

flows of insurance liabilities are deducted from the best estimates by taking the time value of money into account (Hancock, 2001; Babbel, 2005). This indicates that insurers' liabilities are exposed to both insurance and investment risks. In essence, insurers use replicating cash flow technique to separate these two risks from each other (Pablo, 2001). Ideally, value of insurers is not created by investment because of double taxation (both on return and dividend). However, insurers create value by borrowing money from the comparatively inefficient insurance market over the capital market by taking the advantage of underwriting cycle (Hancock, 2001). From the perspective of finance it is argued that the motivation of anything in insurance should be to maximize shareholder value, i.e., to increase the market value of the equity capital. In the narrow view, capital allocation is used to facilitate and improve the measurement of the economic profitability of business with different sources or risk and different capital requirements.

Theoretically, the larger the firm the lesser the risk management costs. This is because of two key but interrelated reasons. Firstly, large firms are well diversified and have a larger internal market for financial risks (because they are diversified), which is less than the cost of external markets, i.e., the credit risk premium (Adam, 2002). Secondly, the large firms have greater negotiation power, thus lowering the financing costs, which ultimately reduces the need for hedging (Dionne, 2003).

The above discussion leads to the conclusion that the measurement of the benefits of ERM needs to be in terms of both the tangible and intangible benefits. Moreover, the benefits need to be integrated into a common/single framework at some stage. Alternatively, it needs both financial measurement and strategic measurement techniques of value creation.

4.4 Financial Management

The literature of firms' financial performance measures often focuses on any of four categories: income (profit and loss),[8] cash flow, return on investment and value.[9] Knight (1997) argues that "each category is related to and builds on the proceeding categories." In financial management such measurements refer to the performance of the firm (Capon, 1990; Cummins, 1998; Cummins, 1998; Otley, 1999). This understanding is built on the perception that the primary task of management is to maximize returns to shareholders (Bartram, 2000; Black, 2000; Doherty, 2000; Fatemi, 2002). However, the criticism is that such measurement is on the basis of purely financial outcome and excludes strategic, operational and ethical issues including firms' social and environmental responsibilities (Carroll, 1979; Cornell, 1987; Clarkson, 1995; Feurer, 1995; Hillman, 2001; Orlitzky, 2003).

[8] The traditional accounting measurers (i.e., EPS, ROI, ROE) as standards of measuring business performance were criticized for their shortcomings of ignoring changes in the economic value of an organization (as they attempt to match cost against revenues which virtually has no control over future cash flows.

[9] Economic value added (the economic value of an investment is the discounted values of the anticipated cash flows after adjustment with risk and inflation), shareholder value added, economic profit.

4.5 Strategic Management

Theoretically, the concept of business performance is at the center of strategic management[10] (Venkatraman, 1986), which is viewed from the perspective of economics, psychology and sociology. It is argued that most management theories (e.g., decision theories) either implicitly or explicitly address the area of performance implication because performance is seen as the true test of any strategy (Bourne, 2002). However, the criticism is that they focus on subjective issues (i.e., customer preference, employee satisfaction) rather than firms' financial outcome. In essence, both approaches are correct, but they are too narrow (Kirchhoff, 1977; Capon, 1990).

It is observed that the importance of both financial and non-financial (i.e., operational) performance measures is well understood in the literature. However, the challenge is the alignment of these two theoretical understandings in a common framework. Nevertheless, this inequality provides an unclear picture of organizational performance (Gunasekaran, 2004). It is important to understand that while financial performance measurements are important for strategic decisions and external reporting, the control of day-to-day operations and functions is often better understood with non-financial measurers (Maskell, 1991). Consequently, for effective performance measurement and improvement, the goals must align with the organizational goals and metrics. This is to reflect a balance between financial and non-financial measures that can be related to strategic, tactical and operational levels of decision making and control (Gunasekaran, 2004). Knight (1997) argues, "Performance measurers are helpful in managing the business when they accurately capture the multidimensional issues influencing the decisions that managers are being asked to make." (Beamon, 1999) suggests four characteristics of an effective performance measurement system (PMS), which can be used in evaluating its strength: inclusiveness, universality, measurability and consistency. In this view 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 the holistic measurement depends on the quality of the required data, which should be measurable and consistent with organization goals. Additionally, the time[11] of measurement is an important issue because the elements are dynamic in line with the changing economic environment (Neely, 2002).

5. Performance Measurement Framework of Insurers' ERM

It is clear that the type of performance measures required for ERM should directly be related to organizations' strategic goals (i.e., corporate objectives). Moreover, the outcomes of ERM should provide information in determining corporate objectives and formulation of appropriate corporate strategies. Since ERM is a management system, the performance of ERM should also provide feedback for the cognitive and behavioural learning processes of the organization in addition to delivering tangible value for the organization (Feurer, 1995). Clearly, a single performance measurement system (i.e., financial or operating) seems inadequate since it is not inclusive, and ignores the interactions among the ERM characteristics. Also, it ignores critical aspects of organizational strategic goals. In addition, it is difficult for a single measure to

[10] A process for senior management to ensure their firms' long term sustainability in the corporate environment
[11] Which, in turn, is associated with the argument of the "time value of money."

provide a clear performance target on the critical areas of business (Kaplan, 1992). Evidently, the challenge is to link the financial components to the operational components within this single framework. In essence, an ERM performance measurement framework should utilize relevant literature from a number of fields including finance, accounting, operations management, marketing, strategy and organizational behavior (Neely, 2002).

Unfortunately, the literature review reveals no model particular to insurance that has the above characteristics. However, the current initiatives of regulators and rating agencies in assessing insurers' solvency and financial benefits may guide the development of such a multidisciplinary model. The following paragraphs discuss them briefly.

5.1 Recent Market Development

As described earlier, the literature on measuring insurers' performance focuses mostly on the financial perspective. However, the empirical study reveals a change in insurers' risk management practices due to the recent movement of regulators (and rating agencies) toward providing risk-based regulations (risk concentrated rating methodologies). Indeed, this is an issue of changing organizational culture in the way it perceives risk and manages the business 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.

5.2 Rating Criteria

In essence, most rating agencies are in the process of developing their approach to ERM as a rating criterion or concept, and its implementation is to follow in the 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 methodology in assessing the strength of ERM of insurance companies in their process to arrive at their credit rating decisions. For instance, the criteria used by S&P to assess the credit quality of an insurance company are traditionally based on eight elements: industry risk, business position, management and corporate strategy, operating performance, capitalization, investments, liquidity and financial flexibility. However, S&P added ERM as the ninth element on the list of criteria (Ingram, 2006). Its focus is to look at how an insurance company defines its loss tolerance of the entire firm and the strength of the process in place to manage risk so that that the consequences of risk remain within this predefined loss tolerance level (Ingram, 2005). They have classified their ERM quality definitions into four categories: "excellent," "strong," "adequate," and "weak" ERM (Ingram, 2006; Standard & Poor's, 2006; Standard & Poor's, 2006). It is important to mention here that S&P declared five areas (e.g., *risk management culture*, *risk controls*, *extreme risk management*, *risk and economic capital models* and *strategic risk management*), which are analyzed to evaluate the strength of an insurer's ERM capabilities (Ingram, 2005). The results of this evaluation are utilized to determine the specific category of ERM for any insurance company. 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. Ideally, the loss/profit, which comes under income stream risk, is a general managerial consideration. On the other hand, the investment performance is associated with stock-market risk and directly related to the concern

of shareholders. Finally, the management capability, which provides direct input in strategic decision making, is a source of strategic risk of the organization (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., diversification benefit) of ERM depends on an insurer's capability in managing its strategic risk. In essence, the S&P criteria, which itself is multidisciplinary,[12] provide a solid ground of measuring the performance of the insurer's ERM program.

5.3 Regulations

On the regulatory side, insurance regulators in EU,[13] United States[14] and Australia[15] have adopted a risk-based approach (McCarthy, 2006) to the assessment of insurer solvency. The Financial Services Authority (FSA) in the United Kingdom has introduced Individual Capital Adequacy Standards (ICAS) in line with Solvency II proposals (Tiner, 2006). Following the EU, Switzerland has introduced a solvency test for Swiss insurers.[16] In addition, International Association of Insurance Supervisors[17] (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 all such initiatives is on capital requirements and supervisory review at insurers' individual legal entities. 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; SwissRe, 2006; Trainar, 2006). In summary, the regulators recognized that good risk management can increase insurers' business efficiency and profitability at the group level (Bies, 2006; Wilson, 2006).

5.4 Value for Shareholders versus Stakeholders

It is understood that 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 (i.e., stockholders). In this view, markets are seen as perfectly competitive, which is itself controversial in the literature of financial economics. In reality, the interests of the members of stakeholders are uneven, and economic theories suggest market irrationality (inefficiency). Consequently, a single measure of the performance of ERM is inappropriate.

In essence, the objective of the performance measurement is organizational control. The objective of ERM is that an organization takes risk intelligently in a controlled (or balanced) manner so that the business remains viable for a longer term while meeting the expectation of the stakeholders (i.e., shareholders, customers/policyholders, employees, regulators, rating agencies, suppliers, etc.). Consequently, ERM is a controlled system (Otley, 1980). Therefore, the performance of ERM can be evaluated with a set of objectives proposed in the multidimensional

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[12] Involving thoughts of various academic disciplines (i.e., economics, finance, psychology and sociology) and different stakeholders.
[13] See http://ec.europa.eu/internal_market/insurance/solvency2/consultation_en.htm.
[14] See www.naic.org/committees_e_capad.htm.
[15] See www.apra.gov.au.
[16] See http://www.bpv.admin.ch.
[17] See www.iaisweb.org.

concept of Corporate Social Performance[18] (CSP), which is built on four essential components (Carroll, 1979; Hillman, 2001; Page, 2005):

(i) Economic responsibility to investors and customers;
(ii) Legal responsibly to the government or the law;
(iii) Ethical responsibility to the society; and
(iv) Discretionary responsibility to the community.

Nevertheless, the idea of CSP is closely linked with Corporate Financial Performance (Orlitzky, 2003). Moreover, stakeholder management leads to improved shareholder value (Hillman, 2001). Indeed, balancing the claims of various stakeholders is a sign of strong management culture of proactive organizations (Barnard, 1938; Chakravarthy, 1986).

5.5 Economic Value Added

EVA measures the return of an investment in excess of expected or required return. EVA seeks to identify lines that create value for the firm (Stern, 2004). EVA is net income return minus the cost of capital (or hurdle rate) for a certain business multiplied by the capital allocated to the business.

For a certain business line i, $EVA = I_i - r_i x\ c_i$; where I_i is the net Income of Business Line I and c_i is the Cost of Capital of the same business line. This relationship institutes that if EVA≥0, then the line of business is profitable (i.e., consistent with value maximization). In case of EVA<0, the line of business is destroying the firm value (Cummins, 2000).

EVA, an accounting-based corporate financial performance measure (Ehrbar, 1999), intends to focus managers' minds on the delivery of shareholder value by measuring the difference between the return on a company's capital and the cost of that capital. Alternatively, EVA makes a balance between the extremes of a cash flow (objective, but historic) measure of profit and a net present value (subjective, but future-oriented) measure (O'Hanlon, 1998). Consequently, EVA is an analysis tool rather than a management practice (Young, 1997; O'Byrne, 1999). The criticism of an EVA approach is that *stakeholders* other than *shareholders* are not explicitly considered in the EVA framework. It is argued that in EVA, the stakeholders (excluding shareholders) are seen in an instrumental element while increasing shareholder value. However, it is argued that an EVA takes a more historic view and only uses accounting, hence managers can benefit from or be penalized by the past history of the organization. Rappaport (2006) argues that because EVA is based entirely on cash flows, it gives a clear advantage over traditional measures without introducing accounting distortions. Nevertheless, the EVA approach pays particular attention to the setting of appropriate financial targets at the corporate level (Ehrbar, 1999). Despite these criticisms, the EVA approach significantly focuses on reward structure within the organization in adding shareholder value through encouraging risk taking (Garvin, 1993). The key criticism of accounting measures is that they do not incorporate risk (i.e., market volatility) or the time value of money. Consequently, they do not help investors to understand the complex process of value creation.

[18] It is argued that in operating legally and with integrity financial firms can perform their social liabilities (Rappaport, 1998).

It is understood that ERM includes a complex structure (or framework) of integrating the sophisticated mathematical calculations (including their outputs) with the human behavior and expert judgement (e.g., selecting the confidence interval of VaR or similar statistical models). Alternatively, the integration of the risks associated with underwriting, investment and finance must align with the organizational issues, such as risk culture and attitude of owners and managers, trust of the policyholders, confidence of the investors and the competition in the market. All of these emphasize the fact that the performance of ERM needs to be judged in terms of the accuracy of mathematical modelling and measurement issues (which are built on economic variables) along with the governance and structural issues (i.e., organizational variables).

5.6 Balanced Scorecard

BSC is a management system that provides a framework to translate a company's vision and mission into a coherent set of performance measures (Kaplan, 1996). It is regarded as a multidimensional approach to performance measurement and management having a link specifically to organizational strategy. BSC defines four areas of performance (i.e., *financial*, *customer*, *internal business* and *innovation & learning*) and levels them in a holistic framework by considering their interrelations (Marr, 2003). In addition, linking an organization's performance measurers with business unit strategy is viewed as a major strength of the BSC approach. It is argued that the BSC puts strategy rather than control at the center (Kaplan, 1992). The advantage of BSC over other performance measurers is that it presents many disparate elements of a company's agenda in a single report (Ahmed, 1998). However, the criticism is that at first sight the BSC would appear to be a stakeholder approach, but with the development of further stages, shareholders are still recognized as the dominant group over the remaining members of the stakeholder group (Shank, 1995; Rickards, 2003). It is understood that although BSC was initially developed as a tool for performance measurement, it gradually turned into a strategic management system (i.e., translating the vision; communicating and linking; business planning; feedback and learning). The incorporation of the concept of "strategy map" shaped BSC as a universal framework of organizational change by linking and flowing a series of strategic objectives of the organization to the financial objectives as the final goal (Kaplan, 1996; Kaplan, 2004; Kaplan, 2007).

It is argued that EVA, which measures the financial performance after the fact, includes the lagging indicator (e.g., quality of the process and the product). In contrast, the BSC considers both the lagging indicator and the leading indicator (e.g., customer satisfaction) including their interrelationships (Young, 2000; Fletcher, 2004). Other academics also showed several overlaps between ERM and BSC in terms of their basic philosophies, organizational breadth and scope of using them as a control and performance measurement tools (Woods, 2007). Clearly, all of an insurer's significant risks cannot be quantified in terms of capital. Consequently, a common measure of risk is an unrealistic concept.

FIGURE 1

An Integrated Framework of Measuring the Performance of Insurers' ERM

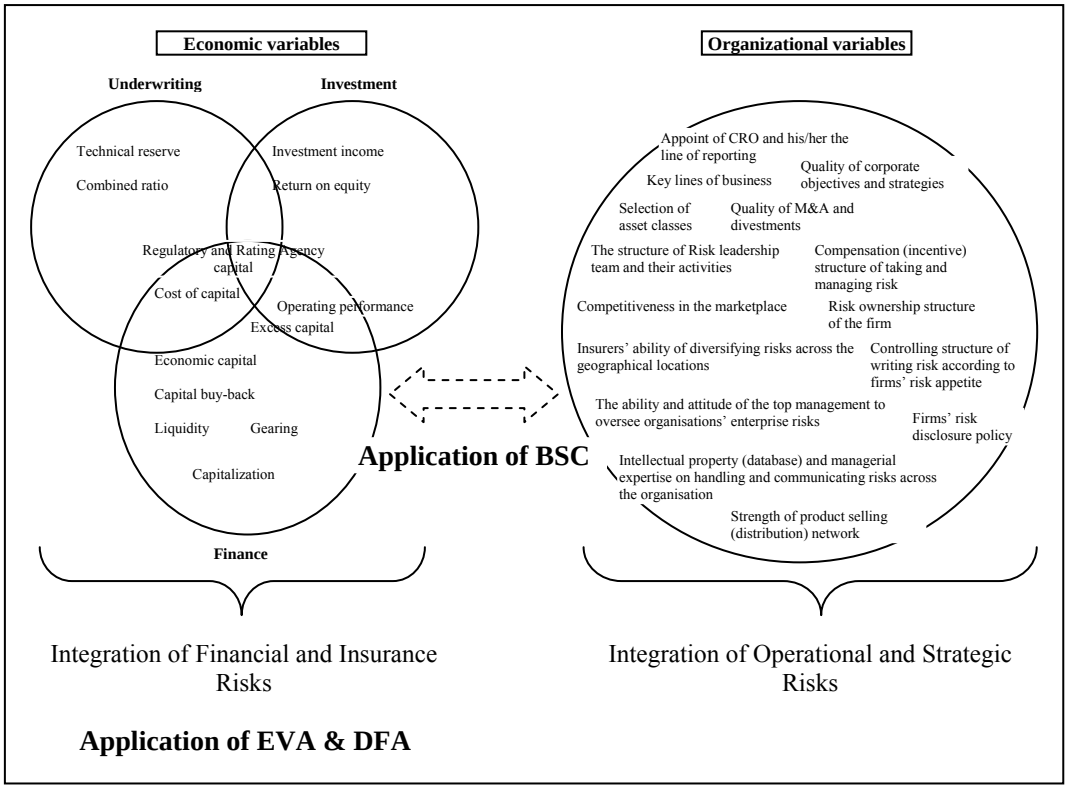

Figure 1 illustrates the elements of measuring the performance of ERM in a single framework. It includes several determinants of both economic variables and organizational variables. The determinants of economic variables are segregated into three key functions of insurers: underwriting, investment and finance. Ideally, the risks attached to all three functions are interrelated and need to be integrated in a single framework. The proposed integration is necessary but challenging. Moreover, each determinant has strength and weakness over another. For example, the combined ratio in measuring P/C insurers' performance ignores investment return and reinsurance results (Calandro, 2002). While the EVA methodology can be utilized to integrate the financial variables, DFA can be used to integrate the financial and underwriting performance. Thereafter, the performance of organizational variables can be applied to the integrated results of the economic variables. However, both techniques can only work with the output of the variables but do not necessarily suggest how they will be delivered or achieved. On the contrary, BSC process provides a set of strategies along with a set of action plans that includes targets, initiatives and resources for each piece of the strategy (Kaplan, 2004). The risks associated with the four stages of strategy maps (i.e., learning and growth perspective; internal perspective; policyholder perspective; and financial perspective) can be utilized to integrate these phases of evaluating the performance of ERM. In Figure 1, the former (three overlapping circles) represents insurers' capability of managing economic risks; the latter (one big circle) suggests the status of an organization's risk management culture.

One significant drawback of the EVA technique is that it overemphasizes the expectation of the shareholders in line with the management (i.e., reducing the cost of capital) but less on the customers (i.e., policyholders). In contrast, the strength of BSC is that it includes a combination of issues that are necessary to deliver shareholder value while meeting the satisfaction of customers. In addition, BSC highlights the requirements of organizational learning and growth perspectives alongside the selection of internal value creating processes for customers. Despite the methodological strengths of selecting and delivering strategies, BSC has a potential drawback as how to utilize the deliveries to calculate the ultimate value of shareholders. Here, the EVA and DFA techniques can be utilized to produce results in the financial perspective of BSC. In a nutshell, the BSC identifies the gap in the value creation process within ERM and provides necessary communication methodologies to develop a logical and holistic framework. For example, selection of asset classes (which represents the risk attitude of the firm) cannot be addressed by EVA. However, BSC can be utilized to include this subjective factor in measuring framework of ERM. Such a multidisciplinary framework can ensure the inclusiveness, universality, measurability and consistency as discussed previously. In addition, this conceptual framework meets the requirements of corporate social performance as discussed earlier.

5.7 Further Research

The evolution of ERM in the insurance industry is still premature, and the understanding is not evenly extended across the professional communities. Consequently, it is a very early stage to define the performance of ERM accurately in a meaningful way. This article just illustrated a conceptual framework of measuring the performance of insurers' ERM. However, collection of data could be a challenging job to test the framework. The potential data sources could be the published press releases of the rating agencies to support the upgrading/downgrading of the ratings of insurance companies. They can give indications of the levels of risk management of the respective insurers. In addition, high profile events (e.g., equity crash in 2001 and 2002; September 11 incident; natural catastrophes in 2005; 2007 sub-prime meltdown, etc.) can be used to compare and contrast the performance of insurance companies using statistical techniques (e.g., event analysis). In addition, several hypotheses e.g., "good ERM practice presents consistent result" can be tested to prove the robustness of insurers' ERM practices. Moreover, one can compare the performance of insurers' ERM in light of the global economic outlook of any particular year (e.g., 2005, which is recognized as a bad year for insurance companies).

6. Conclusion

Taking risk controllably is essential for the insurance business growth and producing return in excess of the cost of capital. It is found that ERM is embedded in implementing insurers' corporate strategies. Moreover, it is realized that the traditional risk management practice (which is limited to isolated quantitative risk modeling) does not include all significant elements of insurers' risk. In addition to calculating the financial performance, risk governance issues were found to be of paramount importance. In essence, any performance measurement system for ERM should include a tool of measuring the quality of the status of both economic and organizational variables. Alternatively, it should include all significant factors (including financial and non-financial) that influence ERM. Beyond competitive advantage of regulatory

compliance and achieving targeted ratings, managers have realized the requirements of creating a knowledge-based risk culture across the organization for creating long-term sustainable value for their organizations. Value cannot be created without sustainable risk taking. Nevertheless, regulatory supervision of organizations' risk management does not always provide competitive advantage for all insurers (in particular those who have established practice of risk management for long). It was found that a little attempt was taken to include the non-financial issues, e.g., customer (policyholder) loyalty, employee satisfaction, influence of an organization's risk culture, etc. in measuring the performance of ERM. Indeed, insurers' failure is calculated on the result of financial variables. However, it is important to realize that the organization factors drive the economic factors, which need to be considered in measuring the performance of ERM.

The argument of the *shareholder value model* (e.g., EVA) relies on the objectivity while ignoring the subjectivity of the phenomena. It emphasizes the understanding that the managers are primarily employed to create value for their shareholders. Moreover, the creation of shareholder value automatically ensures the value of the stakeholders. In contrast, the *stakeholder theory* (e.g., BSC) takes a holistic view, where the organizational risk culture in terms of stakeholders' awareness towards achieving the firms' strategic objectives through proper leadership and teamwork are key considerations of value creation. Alternatively, it emphasizes the human capital (i.e., knowledge and skill as intangible assets) beyond equity capital to build long-term shareholder value of a firm through developing alternative strategies. In the stakeholder value perspective, risk management goes beyond managing the fluctuation of investment income and cash flows. However, both approaches concentrate on root level (e.g., units) performances and align the output (e.g., value) with firms' executive compensation schemes. Lastly, the value of an insurance company should be measured in terms of both shareholder and policyholder perspectives. Consequently, a robust ERM should bring a suitable balance between the single-dimensional (e.g., EVA) and the multidimensional (i.e., BSC) measures of firms' performance.

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