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**Dvorski Lacković, Ivana**

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# ENTERPRISE RISK MANAGEMENT: A LITERATURE SURVEY

Ivana Dvorski Lacković

Faculty of Organization and Informatics, Croatia  
idvorski@foi.hr

## ABSTRACT

*In turbulent environment characterized by increased number and various types of external and internal risks, companies are recognizing the value of enterprise risk management implementation. What is specific for enterprise risk management is a holistic view versus traditional “silo-oriented” risk management. Enterprise risk management is strategically oriented and there is evidence that its adequate implementation may help companies increase their value.*

*In this paper the author will present a literature review on enterprise risk management in non-financial companies, evidence on determinants of its adoption, findings of research available on the topic how enterprise risk management increases firm value and other important aspects of enterprise risk management adoption and implementation.*

**Keywords:** *enterprise risk management, holistic view, non-financial companies, value creation*

## 1 INTRODUCTION

Nowadays, companies that are operating in turbulent, complex and dynamic environment are under extreme pressure to achieve positive business result and satisfy regulatory requirements that are imposed on them. Besides the pressure of competition among companies, there is also the pressure to achieve positive credit ratings. The recent financial crisis has only increased anxiety companies are faced with when contemplating on risks they are facing. According to Paape and Spekle (2012) during the financial crisis “weaknesses in risk management practices have become painfully visible and companies are currently under significant pressure to strengthen their risk management systems and to take appropriate actions to improve stakeholder value protection.”

The global financial crisis has only accentuated non-efficiency of existing risk management systems and the importance of an integrated approach to risk management within companies. Also it is of extreme importance to mention that the purpose of establishing enterprise risk management is not only to satisfy regulatory incentives or to implement something new into the company but to include the information that is received through this process in daily decision making in the company and in strategic-related decision making. Therefore, it is of extreme importance that the supervisory and management board are aware of matters related to enterprise risk management and that the implementation of the process has their full support and is adequately communicated throughout the company.

Having on mind the complexity of risks companies are facing and the significance of establishing and implementing adequate enterprise risk management system in the company, this paper aims to provide an overview and assessment of the available literature regarding the phenomenon of enterprise risk management. The paper is oriented primarily on the literature

review related to non-financial companies due to the fact that financial companies are facing stricter regulatory incentive to introduce enterprise-wide risk management systems so it is of our interest to research incentives and drivers of enterprise risk management adoption among non-financial companies. Following the introductory notes is the section on the risky surrounding of contemporary organizations. Third section deals with theoretical foundations of enterprise risk management. Fourth section is oriented on determinants of ERM adoption, fifth on value creation via ERM systems and finally conclusions are brought.

## **2 THE RISKY SURROUNDING OF CONTEMPORARY ORGANIZATIONS**

As previously mentioned companies are facing many risks in their daily activities, arising both from internal and external sources. Generally, risky events are characterized by frequency of its occurrence (probability) and the extent of the consequences (magnitude) that the event generates (Verbano and Venturini, 2013). As for causes of risky events, they may be external (economic, environmental, social, political or technological) or internal (infrastructure, human resources, processes and technology used by the company) (COSO, 2004). Antikarov (2012) is dividing the strategic risks firms are exposed to as external and internal risks, risks of shock and risks of deterioration.

According to Meulbroek (2002) “the goal of risk management is not to minimize the total risk faced by a firm per se, but to choose the optimal level of risk to maximize shareholder value.” The implication of this statement is that risk, in its core, is not purely a negative event, it may also present a chance for progress. This is in line with Gatzert and Martin (2015) who have stated that the “ERM not only attempts to minimize risk but explicitly accounts for potential opportunities”. This is a very noble goal but can hardly be achieved if the company is managing risks unsystematically. Therefore there have been several attempts to standardize the risk management processes within companies. One of most often used frameworks is COSO (2004) that has introduced the term enterprise risk management (ERM).

The definition of enterprise risk management (ERM) according to COSO (2004) is the following: *Enterprise risk management is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of the entity's objectives.*

Some other very important terms related to risk management in companies include risk appetite and risk tolerance. According to COSO (2004) “risk appetite is the amount of risk, on a broad level, an entity is willing to accept in pursuit of value”. In other words, risk appetite may be regarded as an attitude company is taking towards risk on the level of whole organization (Paape and Spekle, 2012). COSO (2004) is also defining risk tolerance as “the acceptable level of variation relative to achievement of a specific objective”.

On the other hand, there are also some opponent opinions on the subject of standardizing risk management practices. According to Power (2009) the idea of organization-wide risk appetite and risk tolerance is over simplistic and may not be in line with the possibilities that companies are conducting. This critique on the standardization of ERM rules is further on supported by Paape and Spekle (2012) who provide evidence that the application of the standardized framework (in this research the influence of the COSO framework has been explored) does not

help improve risk management quality and that the quantification of risk tolerance does not contribute to perceived risk management effectiveness.

### 3 ENTERPRISE RISK MANAGEMENT (ERM)

ERM is different from traditional approaches to risk management due to the fact that it addresses all risks company is exposed to simultaneously unlike traditional approaches in which every risk is analyzed separately. The main characteristic of the ERM is integration in management of risks that are derived from various sources and that impose a threat or an opportunity for a company, i.e. risks are not treated in “silos” but rather holistically. Schiller and Prpich (2014) argue that ERM is a transformer of risks that are primarily seen by a company as something that it must be defended from into a future-oriented concept that is making it possible for companies to seek and seize opportunities that are available in their environment. The same authors further on state that ERM “stands separate from other organizational risk management systems as the only one that attempts to integrate strategic, financial, hazard and operational risk into a single framework to inform an organization’s strategic objectives” (Schiller and Prpich, 2014).

According to COSO (2004) ERM is presented as a matrix in three dimensions and it consists of eight components that are all interrelated. These components include:

1. *Internal environment* that is generally related to organizations approach to risk management matters,
2. *Objectives settings* are related to the process in which the goals of the entity are defined and communicated throughout the organization,
3. *Event identification* that is oriented on identification of both internal and external sources of risk that, in case of occurrence, may have influence on organization’s objectives,
4. *Risk assessment* is related to analysis and evaluation of potential risks by assessment of their frequency and impact,
5. *Risk response* is characterized by the identification of actions that are appropriate for handling a certain risk and aligned with company’s goals and the defined risk appetite,
6. *Control activities* are encompassing policies and procedures that are ensuring the adequate execution of risk responses,
7. *Information and communication* are related to the mechanisms that are ensuring that information is adequately formulated and communicated throughout the organization,
8. *Monitoring* consists of all activities that are conducted by company’s management and are directed at the evaluation and verification of the effectiveness of the whole process.

The characteristics of ERM include the following (Hardy, 2015, pp. 37):

- A wide range of risks are discussed and reviewed, including reputational, human, capital, strategic and operational;
- Aligns risk management process with strategy and mission;
- May include “upside risks” (opportunities);
- Helps manage growth, allocate capital and resources;
- Risks are owned by all and mitigated at the department level;
- Many risk mitigation and analytical tools available;
- Risk manager is the risk facilitator and leader.

Ward (2003) has developed a model of holistic risk management development that includes six dimensions: interpretation placed on term “risk”, location of applications in the strategy life-

cycle – the decisions to which risk management is applied, the purpose of risk management, the nature of risk management processes employed in degrees of formality, scope of the process, tools and techniques employed, issues that are quantitatively examined, the parties involved and allocation of responsibilities for risk management, resources applied to risk management.

Main advantages of ERM include: greater probability of reaching firms' goals, reduction in the cost of capital (increase in the rating and confidence of investors), greater understanding of main risks and optimization of the portfolio of risks, reduction in the volatility of cash flows, definition of intervention priorities, improvement in compliance to norms, smaller number of unforeseen events and the consequential losses, greater push to change and greater response speed to varied business conditions and greater tendency to risk in order to have greater returns (Verbano and Venturini (2011) according to: Liebenberg and Hoyt (2003), Barton, Shenkir and Walker (2002), Cumming and Hirtle (2001), Lam (2001), Miccolis and Shah (2000)).

Arena, Arnaboldi and Azzone (2011) are stressing out that on one hand there are advantages of ERM encompassing ERM as an insurer of sound corporate governance, but on the other there are some unsolved questions regarding ERM as to what ERM means to a certain company and its management and the usefulness of certain ERM program.

#### **4 DETERMINANTS OF ENTERPRISE RISK MANAGEMENT ADOPTION, IMPLEMENTATION AND QUALITY**

According to Hardy (2015, pp. 32) before enterprise risk management can evolve into practice, “the basic fundamentals of managing risk must be well understood and a part of the learning foundation. This usually starts with establishing a common understanding and definition of risk for the organization”. In continuation to definition of risk, companies must provide support for ERM design and implementation. It is therefore of our interest to provide evidence on available research conducted on the topic of possible drivers and inhibitors of ERM adoption among companies.

Arena, Arnaboldi and Azzone (2011) have analyzed different ERM models available in the literature (Gates, 2006; Protiviti, 2005; COSO, 2004; Liebenberg and Hoyt, 2003; Lam, 2003; Kleffner, Lee and McGannon, 2003; Meulbroek, 2002, AIRMIC, 2002) and have found that there are two characteristics that are distinguishing traditional approaches to risk management and ERM and these are:

1. *Comprehensiveness* which means that ERM should cover different risk categories and is related to the range of risks that are considered,
2. *Integration* that is related to the fact that ERM systems should span all lines of business, functional areas and their reciprocal influence, i.e. governance of risks within all levels and functions of the company.

Miloš Sprčić, Kožul and Pecina (2017) and their research on sample of Croatian listed non-financial companies has indicated that ERM systems in these companies are fairly low and underdeveloped and that at the same time the main drivers for ERM development and higher level of implementation are the size of the company and managerial support that is reflected through corporate culture. Farrell and Gallagher (2015) found that the valuation premium regarding ERM is driven primarily by the risk culture and integration of ERM processes within the organization and by the degree in which ERM process is regarded as integral element in strategy and planning activities by the management board. Paape and Spekle (2012) have

conducted a research on the extent of ERM implementation and the factors that are associated with cross-sectional differences in the level of ERM adoption and further on risk management design choices and their effect on perceived risk management effectiveness. The results of the research conducted on the sample of 825 companies from Netherlands (varying from small to large companies; both private and public sector) suggest that the extent in which a certain company has introduced ERM is influenced by the regulatory environment, internal factors, ownership structure, firm and industry-related characteristics. Pagach and Warr (2011) have examined the factors that are drivers of ERM implementation on the sample of 138 firms. The proxy for ERM implementation is the existence of the function Chief Risk Officer (CRO). The results indicate that larger companies with more volatile cash flows and riskier stock returns are more likely to have implemented ERM. The authors have also found that the likelihood of ERM adoption is increasing in the risk taking incentives of the CEO. Kimbrough and Compton (2009) have conducted an empirical research on the connection between organizational culture and ERM implementation. The incentive for this has been found in previous research by Miccolis (2003) who found that organizational culture may be one of the top barriers to ERM implementation. The evidence provided in the research indicate a positive correlation between organizational culture and ERM programs that are established within companies.

Although more and more companies are recognizing the fact that establishment and implementation of ERM is a necessary prerequisite for business process improvement, there are still many differences in the extent and quality of implemented ERM. According to Farrell and Gallagher (2015) and adapted from Marks (2011), Lindberg and Seifert (2011) and RIMS (2006) there are several levels of maturity of risk management models in companies and these are:

1. Ad-hoc: extremely primitive level of ERM; risks are managed based on individual decisions and by improvising;
2. Initial: silo-based approach with little integration of risks and no unique definition of risks within different departments of the company;
3. Repeatable: existence of established and repeatable approaches to risk management;
4. Managed: risk management activities are spanned enterprise-wide, full standardization and communication of risk procedures within the company;
5. Leadership: risk information presents a basis for strategic decision-making and long-term planning; there is clear understanding of terms risk appetite and risk tolerance and their repercussions for the company.

Segal (2011, pp. 25) defines the criteria that companies have to match in order to achieve more mature ERM programs and these are:

- Enterprise wide scope,
- All risk categories are included,
- Key risk focus,
- Integrated across risk types,
- Aggregated metrics,
- Includes decision making,
- Balances risk and return management,
- Appropriate risk disclosure,
- Measures value impacts,
- Primary stakeholder focus.

Baxter et al (2013) have conducted a research on the topic which factors may be associated with high-quality ERM programs as measured by Standard and Poor's ratings. The results of the research are suggesting that "higher risk companies have lower ERM, likely due to resource constraints inhibiting the investment necessary for an effective ERM". The results of the research also indicate that more quality in ERM programs is related to better corporate governance, less audit-related risk, presence of risk officers or risk committees and boards with a longer tenure.

What is very important to mention in this section are the problems in empirical research of ERM. Namely, Gatzert and Martin (2015) accentuate that in research that is related to ERM one big obstacle is collection of data and that it presents a major challenge due to which ERM research is usually conducted on restricted geographical area or in certain industrial sectors. The authors have therefore made a review of available research on the topic of ERM and two major data sources are visible: survey and public data. It must be mentioned that "companies hardly publish any comprehensive information about their existing risk management systems or plans" (Gatzert and Martin, 2015). When scanning publicly available sources for data, usually financial reports or CEO letters are analyzed by looking for signals in the text that are indicating the presence of Chief Risk Officer (CRO) or similar function, but as indicated in some of the existing research (Grace et al, 2015) this assumption may be misleading.

Baxter et al (2013) have noticed that the research on ERM is conducted by surveys or from publicly available company information, but generally are skeptical towards the usage of publicly available data due to the fact that it is hard to find an adequate proxy for corporate activities in publicly available information.

## **5 ENTERPRISE RISK MANAGEMENT AND VALUE CREATION**

More authors have discussed the fact that one of the basic aims of ERM is to increase the company value. In order for that to be possible it is important for ERM to be in compliance with the strategy of the company. According to Antikarov (2012) strategy is developed through the process of identifying coherent strategic alternatives and selecting among them the one that is expected to maximize the shareholder value. The same author states that "the creation of shareholder value through risk management is an optimization activity where management assesses the probability of occurrence and likely impact of different risks and balances it against the cost and benefit of available mitigation..." and "the value creation goals of ERM are – through the ongoing optimization and carrying out of different activities – to achieve a maximum cumulative net savings for the firm and to reduce the volatility of its overall free cash flow and its probability of bankruptcy." (Antikarov, 2012). Verbano and Venturini (2011) argue that the aim of ERM is to create value for a firm through integrated and proactive approach and that the "enterprise" in syntagme ERM is related to "removal of traditional functional, divisional, departmental or cultural barriers".

According to Farrell and Gallagher (2015) "ERM goes beyond focusing on just risk avoidance activities in recognition of the value to be gained from exposure to risks for which a firm has a strategic competitive advantage". In their research Liebenberg and Hoyt (2011) have been oriented on discussing to what extent has the implementation of ERM programs in companies contributed to firms' value increase. The results have indicated that ERM indeed does increase firm value measured by Tobin's Q value that was significantly higher for companies that had implemented ERM. Further on the users of ERM programs differ from non-users in their financial characteristics such as size, leverage, volatility and in ownership characteristics.

The empirical research by Miloš Sprčić (2013) on the sample of Croatian non-financial listed companies leads to the suggestion that by using the risk adjusted value approach it is evident that efficient risk management in companies can influence company value drivers and positively affect the overall company value.

## 6 CONCLUSION

The aim of this paper has been to present a literature review on the topic of ERM, factors that influence its implementation in the company, how it enhances company value, but also present some critiques of the existing ERM experiences.

The conclusion that may be brought at the end is that there is a growing body of literature on the topic of ERM which is expected due to the actuality of the topic and its importance for contemporary organizations. The gap that is evident is that many existing research is theoretical and more empirical research is missing. It would be very interesting to conduct research on bigger datasets than the ones that are present in available literature and that are usually limited. This problem is related to the fact that access to accurate data regarding ERM is very limited, as previously discussed, on public sources and survey results. Also more research on ERM in different industrial sectors, ERM specificities in companies of different ownership and size and more qualitative research are encouraged.

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