

Investigating Enterprise Risk Management (ERM) and its impacts on firm value	العنوان:
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8. Recommendations and Future Research:

1. Using the holistic approach of enterprise risk management ERM may enhance the firm value. And enable the firms to handle threats in the surrounding environment. And seize the promising opportunities.
2. Firms should take the most of growth opportunities because it has a positive significant effect on the firm value.
3. On the contrary, firms should do much effort to make a suitable balance in the financing resources, because involving in highly leveraged activities affect firm value negatively.
4. The future research could extend this work to further investigate factors affecting applying the enterprise risk management in the banking industry. As our research concluded that it has a significant effect on the value of the firm.

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The second hypothesis: There is no relationship between opportunity growth ROA and firm value.

The third hypothesis: There is no relationship between financial leverage ETA and firm value.

The fourth hypothesis: There is no relationship between firm size (TAA) and firm value.

We use the t statistic to test the Each one individually as follows: hypotheses.

Table (5) Testing the hypotheses

The hypothesis	The independent variable	R	Sig.	T	Sig.	F	Sig.	Reject / accept
First	ERM	0.79	0.05	3.012	0.003	33.4	0.003	Reject HO
Second	ROA	0.56	0.00	8.023	0.000	43.9	0.000	Reject HO
Third	ETA	0.55-	0.02	4.36-	0.000	74.8	0.002	Reject HO
Fourth	TAA	0.024	0.729	1.35	0.17	25.6	0.314	Accept HO

➤ Summary and conclusions:

The results obtained from the regression model indicate the following:

1. The overall regression is significant according to the global test and the analysis of variance.
2. The independent variables: ERM, ROA and ETA have significant relationship with the dependent variable ROE that represents firm value.
3. The sign of the regression coefficients of ERM, ROA and ETA are consistent with the expected sign according to the economic theory and previous studies.
4. The independent variable TAA as a proxy for firm size doesn't prove significance. Thus it is eliminated from the regression equation.
5. The firm value is affected by: The use of enterprise risk management ERM as a comprehensive approach that captures all the surrounding risks and seize the opportunities as well.

The suggested model is:

$$ROE = 5.33 + 3.75 ROA - 0.77 ETA + 9.02 ERM + 1.149TAA$$

Table (4) The VIF is in an acceptable range if it doesn't exceed the upper limit (10)

	Unstandardized Coefficients	Standardized Coefficients	T	P	VIF
Con	5.033				
ERM	9.02	0.29	0.879	0.002	2.7
ETA	0.77	0.289	3.141	0.000	1.5
ROA	3.075	0.503	4.20	0.000	1.01
TAA	1.149	0.118	8.88	0.178	2.4

Regarding the VIF for each regression coefficient we found that it doesn't exceed the upper limit (10); thus we conclude that there is no problem of multicollinearity in our regression model.

We further investigate the contribution of each individual independent variable, to test whether or not the regression coefficients are different from zero. Looking at the table above; the independent variables ERM, ETA, and ROA have significant regression coefficients. And also the positive sign ERM, ROA is consistent with the expected signs as they have direct relationship with the firm value.

While the equity to total assets (ETA) has an inverse relationship with firm value as expected, because in the literature it is supposed that when firms is involved in taking risks and undertaking highly leveraged projects might affect its value negatively. Whatever there is mixed results about that, but the negative sign is not contradicting. Relating to TAA which represents the firm size, it is found to have a weak relationship with firm value and its regression coefficient is not significant.

Based on the above results we conclude that the suggested independent variables in the regression model are significant except for the TAA which refer to firm size. Also according to the values of VIF, it is found that the set of independent variables in the model are not correlated and shouldn't be removed from the regression equation.

➤ Testing the hypotheses:

We test the hypotheses of the study through applying the global test that none of the regression coefficient is equal to zero.

The first hypothesis: There is no relationship between using ERM and firm value.

Table (3) The Model Summary

Model	R	R2	adjR2	SE	DW
1	0.82	0.68	0.67	7.9	2.004

Other finding from the ANOVA Table is: About 67% of the variations in the firm value is accounted for by the set of independent variables, and it is a high portion: ERM, ROA, ETA, and TTA.

➤ **Testing the Autocorrelation between residuals**

The Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not autocorrelated. The Durbin-Watson statistic ranges in value from 0 to 4; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. A value near 2 indicates non-autocorrelation. As shown in the above table D.W Value is near 2. This indicates that the residuals are not auto correlated. And if the value of the test is between the DL and UL (2, 4); Then the test statistic is inconclusive.

➤ **Testing the case of Multicollinearity**

Multicollinearity is the case when independent variables are correlated. Correlated independent variables make it difficult to make inference about the individual regression coefficients and their effects on the dependent variable.

Although multicollinearity doesn't affect the ability of the regression equation to predict the dependent variable; it is important not to include highly correlated independent variables in the regression equation due to the following reasons:

1. A variable of high importance may have a regression coefficient that is not significant.
2. A regression coefficient that should have a positive sign turns out to be negative, and vice versa.
3. When an independent variable is added or removed, there is a drastic change in the values of the remaining regression coefficients.

To test for multicollinearity we used the Variance Inflation Factor

$$VIF = 1 / (1 - R^2)$$

7.4 population and sample:

The study was applied to 15 banks out of 32 which constitute the universe of commercial banks in Egypt for the period 2000-2014. The sample was chosen purposively according to the availability of continuous time series data in the study.

7.5 Results and Discussion:

Table (1) Correlation Matrix

	ROE	ERM	ETA	ROA	TAA
ROE	1	.79	-0.54	0.506	0.024
	0.05	0.02	0.00	0.00	0.00
ERM	0.79	1	0.56	0.11	0.74
	0.00		0.00	0.07	0.00
ETA			1	0.065	0.487
				0.03	0.000
ROA				1	0.121
					0.07
TAA					1

The correlation matrix reflects a strong and positive relationship between using enterprise risk management ERM and firm value represented in the returns on equity ROE variable (0.79). And also a strong positive relationship between the control variable; return on assets ROA and an expected inverse relationship between the equity to total assets and firm value because the first the size of financial leverage in the firm (-0.54). At last the total assets algorithm is found to have a very weak relation to firm value (0.024) rather than being not significant.

Table (2) The ANOVA table

Model	S.S	DF	MS	F	Sig.
Regression	28516.8	4	7219.2	114.2	0.000
Residuals	13596.8	215	63.24		
Total	42113.6	219			

Dependent variable: ROE

Predictors: ERM, ETA, ROA, TAA

From conducting the global test; the researcher concludes that the overall regression model is significant as the computed F equals 114.2 and the P. Value is (0.000).

In statistics, OLS regression is utilized to estimate unknown parameters within a linear regression model. This method involves minimizing the sum of squared residuals, in other words the vertical distance between the actual and estimated positions of the dependent variable, with the resultant estimator being expressed using a simple mathematical formula.

The following regression model is proposed for testing the proposed relationships between ERM and firm value:

$$ROE = \beta_0 + \beta_1 ERM + \beta_2 SIZE + \beta_3 LEV + \beta_4 SG + \beta_5 ROA + \varepsilon \dots \text{ [Eq 1]}$$

Where:

ROE: is the proxy for firm value. It is taken from the annual reports of the firm

SIZE: is the measure of firm size, defined as the natural logarithm of book value of total assets. The expected sign of Size is positive.

LEV: is the measure of financial leverage, defined as book value of totality divided by book value of equity. The researcher uses the Equity to Total Assets (ETA) as a proxy for Leverage. The expected sign of LEV is positive.

ROA: is the proxy for growth opportunities. The expected sign of ROA is positive

ε : is the error item, also known as the residual.

In the previous equation: ROE is a dependent variable; whilst ERM is an independent variable. The remaining independent variables are control variables, which are employed to control the association with firm value (and thus help to explain the relationship between ERM and firm value).

The data was obtained from financial statements of the firms. Data analysis involved running the linear regression analysis function using the SPSS.

The decision to implement ERM is made by the board of directors rather than by the CEO (Lam, 2001), in spite of this; ERM requires strong support from senior management due to its scope and impacts. There are two categories of independence variables; independent test variables and independent control variables.

Independent control variables:

A considerable part of previous studies found some firm characteristics to be related with the amount of risk to be managed and the appointment of a Chief Risk officer.

Agency cost:

Agency costs arise from both equity and debt financing. We Use free float (FF) to control for agency costs of equity, and leverage (LEV), measured as long-term debt over total assets. It was found in some studies that highly leveraged firms have high involvement of an advanced ERM program; similarly the firms with high leverage, are more likely to hire a CRO.

Size:

Firm size, measured by total assets is believed to have a positive relation to ERM implementation. As an organization's size increases, the scope of events threatening it is likely to differ in nature, timing, and extent. In addition to having a greater need for more effective enterprise-wide risk management techniques, larger entities may have greater resources to ERM implementation.

The objective of the analysis is to estimate the relation between the implementation of ERM and firm value. The study is going to model firm value as a function of ERM and other value determinants such as leverage, size and growth opportunity.

7.3 The statistical model for data analysis:

To test the hypotheses the study employed ordinary least squares (OLS) regression analysis, a very common and practical technique frequently employed in numerous studies focused on testing relationships between variables. Ordinary least squares regression analysis has been employed in a number of studies, such as Beasley et al. (2008) and Gordon et al. (2009), which have sought to investigate factors effecting on firm value.

6. The study hypotheses:

- H1: There is a positive relationship between ERM and firm value.
- H2: There is a positive relationship between firm size and firm value.
- H3: There is a positive relationship between leverage and firm value.
- H4: There is a positive relationship between sales growth and firm value.

7. The design of the empirical study:

7.1 Study variables: The determinants of firm value:

Leverage:

It is equal to the ratio of the book value of liabilities to the market value of equity.

The expected sign of the relation between leverage and ROE is vague. On the one side, financial leverage enhances firm value to the extent that it reduces free cash flows, which might otherwise be invested in suboptimal projects, and on the other side excessive debt may cause default to company (Michelle M. Harner, 2010).

Growth opportunity:

May be expressed by one of the three following ratio according to availability:

The ratio of R&D to Sales; the ratio Return on Assets (ROA); or by using the ratio of sales in two successive years to get sales growth as a proxy for growth opportunities. The researcher uses Return on Assets (ROA) as a proxy for growth opportunity.

Size:

From previous studies there is some evidence that large firms are more likely to implement an ERM program. So, it is important to control for size in the analysis because ERM indicator may proxy for firm size. The researcher uses Total Assets Algorithm (TAA) to control for size-related variation in ROE (as the independent variable that proxy for firm value).

7.2 The determinants of ERM adoption or implementation:

The determinants for the multiple regressions analysis that influence the level of

ERM Implementation are on one hand taken from existing research but on the other hand derived from interviews with risk management experts and current streams of thoughts on ERM program development.

separation of the roles of CEO and board chair and the presence of a financial expert in the audit committee(Pagach and Warr,2007).

The study represents a significant contribution in the following points:

1. It provides a practical measure of the determinants of ERM; through modeling the determinants of ERM in the financial sector in Egypt-applied on commercial banks.
2. It provides evidence on the relationship between firm value and the use of ERM program.
3. It provides empirical evidence through testing the hypothesis that ERM is value adding for firms.

5.2 Total risks in business environment:

Risks can be classified into four categories:

Operational Risks: risks related to the organization's human resources, business processes, technology, business continuity, channel effectiveness, customer satisfaction, health and safety, environment, product/service failure, efficiency, capacity.

Financial Risks: includes risks from volatility in foreign currencies, interest rates, and commodities; also could include credit risk .market risk and liquidity risk

Hazard Risk: risks that are unpredicted and also cannot be controlled such as natural disasters; diverse insurable liabilities; physical assets deterioration; terrorist incidents or attacks.

Strategic Risk: it is risks that relate to strategy, political, economic, regulatory, and global market conditions; including reputation risk, brand risk and fluctuations of customer needs.

The holistic risk approach enables management to identify a great part of the key risks that face the firm. But Implementing ERM does not mean that the firm will be able to anticipate every risk that could result in reduction or fluctuations of stakeholder value.

from top management, communication, culture, information technology, organization structure, training and trust.

A considerable high percentage of literature really exists regarding firm specific characteristics related to traditional risk management (TRM) such as hedging and other common issues, while the studies on the determinants of ERM adoption are few.

Smith and Smithson (2005) and the study of Tahir and Razali (2011) report a positive relationship between firm size and debt exposure and the decision to hedge. They also suggested corporate governance factors as drivers of firm risk management strategy. Baxter et al. (2011) developed explanatory structure using theories from the ERM literature. It was found that larger and more diversified firms have higher quality programs. The results support the explanation: higher-risk companies have lower quality ERM, most probably due to resource constraints hindering the investment needed for achieving the effective ERM.

A number of studies have used hiring the Chief Risk Officer (CRO) as an indicator for a firm's involvement in ERM; but this may be misleading since a CRO may not necessarily implement an ERM procedure, or the existing CRO could be replaced by another, or the title of the position could have been changed. Beasley et al. (2005) and Paape and Spekle (2012) have adopted a different approach, as they use an ordinal scale ranges from "no plans exist to implement ERM" to "complete ERM is in place" to assign the level of ERM implementation. Other studies take Standard & Poor's ERM rating as an indicator of the ERM progress (Lin et al. 2012).

In the same vein; Liebenberg and Hoyt (2003) used hiring a Chief Risk Officer (CRO) to examine the determinants of ERM adoption. The authors found that companies that hired a CRO had higher leverage. Furthermore, Beasley et al. (2005) show that greater involvement of ERM programs was associated with the following factors: the presence of a CRO, board independence, managerial involvement, firm size and auditor.

In this regard; Borokhovi, Crutchely and Simkins, 2004 found that firms with more independent boards were more likely to manage risks through the use of interest rate derivatives or hedging. Another study also report a positive relationship between hedging activity and the

on the way of preventing financial distress or failures. Klimzak and Kozminski (2007) states that trust in the firm's continuity is predominately important to customers and contributes to firm value in a significant way.

Nocco and Stulz (2006) view that ERM as a risk management system brings two major benefits to a firm. The first that can be achieved on the long-run is competitive advantage that a firm can gain through ERM. This becomes possible with ERM since it enables firms to transfer its non-core risks in a cheap way to the derivatives market effectively. By this way, the firm can take more core-risks that it has competitive advantage in bearing. And by increasing the ability to bear more business risk, firms can create competitive advantage in long run.

The second benefit of ERM comes from hiring a CRO, who will take the responsibility of the enterprise risk management implementation, return on equity and shareholder value can be maximized through allocating capital to the business activities that yield the highest returns. Hoyt and Liebenberg (2011) reported that the holistic view of ERM approach enables firms to better address and understand all risks across business units entirely; consequently this leads to an objective resource allocation, improving return on equity and capital efficiency.

Akram G., (2011) suggested four factors that affect ERM implementation which are: risk assessment, communications, monitoring, and control. A questionnaire was conducted and distributed to financial sector in Bahrain (33 question), and SPSS was used to analyze the questionnaire responses. The results showed that financial sector doesn't neither consider risk assessment nor communication while Implementing ERM. But it takes into consideration control activities while Implementing ERM.

The study of Na Ranong P. and Phuenggam W. (2009) aim at gaining better understanding of risk management procedures. And to investigate the critical success factors for effective risk management procedures for the financial industry in Thailand. The study used the framework for the risk management process presented by standards Australia and standards New Zealand (2004).

The findings reported that there are seven critical success factors that can be used as a guideline to increase the effectiveness of risk management procedures. These factors are; commitment and support

5. Literature review

5.1 ERM and firm value

Firms embrace ERM activities for many reasons. Some of these are reducing financial failure costs, minimizing agency costs and deducting firm taxation. The value of the firm is an economic measure of firm performance which represents the worth of the business. The interest here is on the entire capital structure of the firm, such that allowing comparisons among firms of different structures of capital (Smithson, C., and Simkins, B.J., 2005). Assuming that maximization of firm value is an applicable objective of many firms.

The effectiveness of an ERM approach within a firm is based on the comparison between the firm and its competitors. Theories of institutional ownership may introduce some explanations for the ability of ERM to enhance firm value. That enables portraying the relationship between firm performance and the structure of its ownerships explicitly.

The theory of institutional ownership posits an inverse relationship between the level of stability of firm ownership and its performance (Cheng et al. (2011), Chung and Zhang (2011) and James (2001)). ERM increases firm value by reducing the agency costs resulting from differences in risk appetite between firm managers and owners of the organization. But there is no consensus in the existing literature on the nature of this discrepancy. (Seamer M. et al., 2013).

The study of Dechow and Sloan (1991) argue that agency costs result from the differences of risk appetite as managers may be more risk adverse than firm owners. losses are expected when management avoid risky projects with positive net value.

On the contrary is the study of Jensen and Meckling (1976) which stated that it is management's incentives to exceed shareholder return expectations and not their aversion to risk that drive agency costs. As managers do not undertake the full burden of the losses they cause.

Williamson (1998) views that regulatory institution and the required standards for accepted practices represent the determinants of corporate risk profile rather than managers and owner preferences. This is most probably the case when firms have large finance contracts that do not provide much space for diversification. Advocates of Stakeholder theory also argue that risk management is important to give good signs to stakeholders that the firm is proactive

- It is not logic nor economic to hedge all risks across all department, as it consequently compound the expenses.

Some risks may be related to one source, so there must be better understanding for the interdependencies that exist between risk types.

The Society of Actuaries has set the organizational objectives for adopting ERM as follows: (Society of actuaries2006)

1. Greater Competitive advantage.
2. Achieving Strategic goals.
3. Adding Shareholder value.
4. Improving transparency of management.
5. Better decision making.
6. Regarding Policy holder as a stakeholder.

In sum, ERM helps firms to have better understanding of the surrounding risks so that they can reduce the expected losses and exposures, enhance overall corporate performance and maximizing stakeholder.

3.3 The role of Management Accountant in ERM implementation

According to the Institute of Management Accountants (IMA, 2007), the management accountant can play a major role in ERM implementation by supporting the process, providing expertise on the process, serving on cross-functional ERM teams, and providing thought leadership. Other key roles include assisting with the quantification of risks, analyzing the risk correlations, developing the range and distribution of a risk's impact, determining the reasonableness of likelihood estimates, benchmarking impact and likelihood against historical events and other organizations, setting and understanding risk tolerances and appetites, assessing and quantifying various alternative risk mitigation strategies, and quantifying the benefits of ERM.

4. Objectives of the study

1. To examine the effects of ERM program implementation on firm value.
2. To investigate the factors (determinants) that influence ERM implementation.
3. To model the relationship between ERM along with other control variables and firm value.

4. Providing integrated responses to multiple risks: to ensure that all related risks are addressed.
5. Seizing opportunities: to ensure that not only are the risks identified, but also the potential opportunities as well; which enable firms to capture the activities that achieve competitive advantage.

Bertenetti et al. (2013) reported some other expected benefits of ERM implementation which encompass the following benefits:

1. Enhancing consistency and communication of risks within the organization: as it provides a comprehensive framework for all departments in the organization which consequently provides improved opportunities for communication and coordination among various levels and departments.
2. Improving reporting and disclosures: as ERM enables better structure, reporting and risk analysis. Aggregated risks across the whole firm increase the focus of managers, supporting better decision making regarding risk limits, and risk tolerance. The most important value from ERM and reporting is its concision and flexibility. Improved focus and attention of risk data. Using ERM is a very useful means to further investigate and evaluate key performance indicators regarding risks. Eventually this provides a method to measure and better quantify risk factors and tolerances.
3. Also ERM models allow more effective and holistic vision of risk as traditional risk approaches focus on risk from the perspective of mitigation, acceptance or avoidance. But effective ERM activities give management a framework to assess risk as an opportunity to increase competitive advantages and exploit certain market.
4. The portfolio view of risk entailed that risk managers are aware of some significant postulations : (Kanahai C. et al. 2014)
 - Dealing with risk in every department separately raise total risk for the firm.
 - Mitigating risk in one department may create significant risk in another department.

Regardless of the opacity and very different definitions about the components of ERM, a consensus has begun to emerge about the main elements of ERM. First, ERM assumes that managing the risk of a portfolio is more efficient than managing the risks of each individual activity (Brimley P., 2012). ERM incorporates not only traditional risks like product liability and accidents, but also strategic risks such as product discarding or rival's actions. Thus, each decision within the firm requires risk management concerns. Often the largest risks a corporation faces lie in strategic areas where the absence of relevant historical data prevents accurate probabilities estimation. Lastly, ERM assumes that firms should not view risk as a problem to avoid or mitigate, because firms that have competitive advantage in managing a particular risk should seek profitability and high returns through it.

3.2 The benefits of ERM

The activities of ERM are not complimentary; so the decision of ERM implementation must take in consideration the balance between the cost of ERM program and the expected benefits of this program. COSO (2004) reported that ERM can be a beneficial tool for firms through reducing operational shocks. Some studies stated that managing risks using the traditional risk management approach (TRM) creates deficiencies due to lack of coordination between the various departments; ERM advocates claim that by using the integrated decision making through all risk classes; companies can evade duplicated costs of risk management. ERM provides a holistic structure that aggregates all types of risks into one integrated framework that facilitates the identification of expected interdependencies between risks across different activities.

Ezeosa (2011) stated that the benefits of ERM or the advantages as described in COSO ranging between the reduction and mitigation of risks on one hand, and capturing opportunities on the other. As shown in the following points:

1. The linkage between risk appetite and strategy: to ascertain that risks are within the acceptable and desired limits.
2. Improving risk response decisions : to ensure that optimal resource allocation
3. Reducing operational shocks: This is to ensure that potential events are well identified, assessed, and responses are present; more over reduction of surprises and related losses that result from the highly dynamic and changing environment.

There are so many definitions of ERM, D'Arcy and Brogan (2003) offered one of the first definitions of ERM (Casualty Actuarial Society, CAS, 2003).

"ERM is the process, by which the organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organizations short and long term value to its stockholders". In this definition the committee places special emphasis on the five factors:

- ERM is a process
- ERM is applied to all industries
- ERM is a value creating system and a risk mitigating as well.
- It considers all sources of risk
- It considers all the stakeholders of the enterprise.

The definition of Committee of Sponsoring Organizations (COSO) focuses on two main points; opportunities and threats that ERM has to deal with; the definition of COSO is as follows:

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

According to the Institute of Internal Auditors (IIA, 2001) "Enterprise risk management is a rigorous and coordinated approach to assessing and responding to all risks that affect the achievement of an organization's strategic and financial objectives".

Standard & Poor's (2008) define ERM as " an approach to assure the firm is aware of all risks; a set of expectations among management, shareholders, and the board about which risks the firm will and will not take; a set of methods for avoiding situations that might result in losses that would be beyond the firm's tolerance; a method to shift focus from cost/benefit analysis to risk- reward approach ; a way to help fulfill a fundamental responsibility of a company's board and senior management; a useful tool for cutting excess risks and a system for skillfully selecting which risks need to be cut ; and a language for communicating the firm's efforts to the desired manageable risk profile".

Since late nineties in the twentieth century the Egyptian government has taken wider steps on the way to modernize the banking industry through the economic and structural reform program (ESRP).consequently this imposed new regulatory requirements.

- The new regulatory requirements:
Bank regulators have established new standards for risk and capital management, including financial examination and reporting requirements. Bankers in their efforts to comply with the multi regulations recognize that risk management must not stick to regulatory compliance, and it would rather extends to creating business value through better risk-based pricing (Iam, J. 2007).

In the same vein; banks realized that Basel accord is not comprehensive enough to establish a holistic risk management system which could help them identify, mitigate risks across enterprise in all aspects and at the same time rationalize and ripen their risk management practices across the enterprise activities (Jayaprakash Kavala, et al.,).

There are drivers of ERM, this includes the following factors:

- Greater financial disclosures and corporate governance.
- Issues of information technology and security.
- Readiness and anticipating for shocks and business survival
- Compliance with laws and regulations.
- Concerns of rating agencies.

Finally the problem of the research is to examine the impact of enterprise risk management (ERM) on firm value, along with other control variables.

3. An overview of ERM

3.1 ERM definition

Enterprise risk management is an increasingly popular strategy that evaluates and manages all types of risks faced by the firm in a comprehensive framework.

ERM units. While there has been increasing attention from practitioners and academics in ERM; the importance of ERM, prevalence and characteristics of ERM programs, there is a little empirical evidence about the impact of ERM programs on firm value.

Due to the difficulty of building a reliable measure of ERM; so a number studies to have used the existence of the chief risk officer as a proxy for ERM implementation (Beasley et al., 2008), while other studies tend to use their own measures (Gordon et al., 2009).

The financial sector has gripped great attention in the literature, especially the insurance sector. The results found that organizations may take many advantages of using ERM represented in: decreasing fluctuations in earnings and stock price; improving capital efficiency and creating savings between various activities (Beasley et al., 2008).

It is expected that ERM adoption creates increased awareness of risks, and facilitates better operational decision making. The objectives of this paper are to examine the effects of ERM implementation on firm value and to explore factors affecting ERM implementation consistent with the expected benefits of ERM.

2. Problem statement

Banks are one of the most important financial institutions due to the fundamental role of collecting and mobilizing savings of households and other agents to finance the investment needs of firms and individuals (denzier et al. 2007). To cope with the highly competitive environment and also to simulate with financial globalization requirements, banks should pay more attention to the way of managing risks.

Risk management in banks should be discussed in the context of the overall business and regulatory environment. Despite the variation in risk management practices and issues across different countries and individual banks, there has been identified several common issues. These issues include:

- Economic and financial volatility: (Thornton G., 2013)
Banking industry faces higher economic and financial uncertainties. This is represented clearly in the economic and financial indicators.
- Banking reform and structural changes:

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Abstract

The study aims at examining the effects of Enterprise Risk Management (ERM) implementation on firm value, and to explore the factors affecting ERM implementation. The study uses the ordinary least squares method to model the relationship between enterprise risk management and firm value. (Return to equity ratio is used as a proxy for firm value).

The findings show that the overall regression is significant; the independent variables are enterprise risk management ERM, growth opportunity that is proxy by ROA, and financial leverage expressed by Equity to Total Assets (ETA) and firm size which is proxy by Total Assets Algorithm (TAA). It was found that growth opportunity, leverage and enterprise risk management have significant impact on firm value. But firm size doesn't prove significance on firm value.

Key words: Firm value, Enterprise Risk Management (ERM), Equity to Total Assets (ETA), Total Assets Algorithm (TAA).

1. Introduction

At recent highly competitive business environment, business entities face greater uncertainties on both sides threats and opportunities. In their pursuit to create value and to stay competitive, it is important for firms to enhance decision making on a strategic basis to take the most of the opportunities and minimize the undesired effects of threats and avoid losses (Hoyt, R. E., & Liebenberg, A. P. 2011).

The interest in enterprise risk management ERM is increasing in recent years. So many organizations have implemented ERM programs; rating agencies such as standards and poor's include the ERM in its global corporate credit rating process starting in the third quarter of 2008. Consulting firms also have established specialized

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