

Enterprise Risk Management and Firm Value: The Role of Board Monitoring

✉ Muhammad Faisal, Auliffi Ermian Challen

Accounting Department, Faculty of Economics and Business,
Universitas YARSI, Center Jakarta, 10510, Indonesia

ARTICLE INFORMATION

Article History:

Received October 10, 2020

Revised November 6, 2020

Accepted 27 June 2021

DOI:

10.21532/apfjournal.v6i1.204

ABSTRACT

This study aims to obtain empirical evidence related to the influence of Enterprise Risk Management on firm value and the role of monitoring by the Board of Directors and the Board of Commissioners in moderating the effect of ERM on firm value. The sample used is manufacturing companies listed on the Indonesia Stock Exchange in 2014-2017. The test results show that ERM is proven to be able to suppress the uncertainty that arises from the company's activities and the conflicts that occur, which affect the formation of firm value. Furthermore, the excessive number of directors is proven to harm company performance because it is prone to conflicts of interest and the many parties who have the opportunity to become free riders in their responsibilities as directors. So, the board of directors who have an effective role is only carried out by a few people. On the other hand, there are many commissioners in a company that proves to be not very influential in moderating the influence of ERM on the company's value. This research is expected to contribute to the accounting literature in filling the existing gaps, especially regarding Enterprise Risk Management.

Keyword: Enterprise Risk Management, Firm Value, Board Monitoring.

1. INTRODUCTION

In carrying out the company's business processes, each organization faces various risks. Risks faced by the company need to be managed properly so that these risks can be aligned with company objectives. Risk in a company can be managed with various approaches. Corporate risk management approaches continue to change and develop over time. Initially, the risk is managed using a separate approach, the silo approach. Risks are managed separately by each section or function in the company. This approach then continued to develop until finally the Enterprise Risk Management (ERM) emerged in 2004, which was introduced by the Committee of Sponsoring Organizations (COSO).

COSO then issued the Enterprise Risk Management Framework.

Some of the turmoil that has occurred in recent years, which began with a variety of cases of corporate accounting scandals, the global financial crisis that caused many high profile companies to fall, until the issuance of regulations related to corporate governance in various countries has increased the impetus for companies to implement ERM.

One of the most attention-grabbing ERM-related studies is the study of whether ERM provides benefits and relevance to companies. Research conducted by Hoyt & Liebenberg (2011) found that ERM is positively related to firm value. In line with these findings, a study conducted by

✉ Corresponding author :
Email: m.fsl@yahoo.com

Florio & Leoni (2017) also found evidence that companies that have implemented ERM at an advanced stage will have high performance, both financial performance and market evaluation. Also, companies that have implemented ERM to the mature stage show higher firm value (Farrell & Gallagher, 2015). Furthermore, Callahan & Soileau (2017) conducted a study related to the maturity of ERM implementation with the company's operational performance. The results of its research found that companies with a more mature ERM implementation showed better operating performance compared to other companies. ERM is also considered to be able to improve performance because it helps companies to avoid losses, bankruptcy, and reputation costs (Baxter et al., 2013). In addition to finding results that show the benefits of ERM to companies, research on ERM also found that no significant relationship was found between ERM and the value of manufacturing companies listed on the Istanbul stock exchange (Sayilir & Farhan, 2016).

Besides still finding different research results related to the influence of ERM on the value of the company, previous studies have not involved the role of board monitoring as one of the corporate governance mechanisms that can influence company decisions in terms of risk management. According to Gordon, Loeb, & Tseng (2009), there are several factors in a company that are believed to have an impact on the relationship of ERM and company performance, one of which is board monitoring. The board is an essential element in corporate governance, which is influential in deciding and implementing policies taken by the company. Kleffner, Lee, & McGannon (2003) stated that the adoption and implementation of ERM by companies is influenced by various factors, one of which is the encouragement of the board. If the board is not active in supporting ERM implementation, then ERM will not develop and provide benefits to the company, because according to Sobel & Reding (2004) the effectiveness of

ERM in a company depends on the active participation of a company's board. In addition, a national risk management survey in 2017 shows that the highest responsibility in implementing risk management in companies in Indonesia is at the company's top management (CRMS, 2017). Based on the above findings, this study will try to get empirical evidence related to the relationship of ERM to the value of the company with board monitoring as a moderating.

Referring to the explanation that has been stated before, this research formulates three research questions, namely: (a) does the implementation of ERM have a positive effect on firm value?; (b) does the board monitoring strengthen the positive effect between ERM and firm value?; This study aims to obtain empirical evidence related to the influence of ERM on firm value, as well as the role of board monitoring regarding the relationship of ERM to firm value.

Another contribution made by this study is the use of more recent proxies to measure risk management. This study follows the proxy used by Florio & Leoni (2017). The use of risk management implementation index by Florio & Leoni (2017) was chosen with consideration that so far the ERM research (for example Beasley, Pagach, & Warr, 2008; Hoyt & Liebenberg, 2011; D. P. Pagach & Warr, 2010; D. Pagach & Warr, 2011) most use the existence of a Chief Risk Officer (CRO) as a proxy for ERM (Callahan & Soileau, 2017). According to Callahan & Soileau (2017), the use of CRO disclosures by companies as an ERM proxy contains weaknesses because the appointment of a CRO by the company cannot guarantee that the ERM in the company has been properly implemented effectively. Conversely, the absence of a CRO appointment at the company also does not guarantee that the company does not implement ERM. The ERM measurement used by Florio & Leoni (2017) uses six items in measuring a company's ERM, so that, it is considered able to overcome the weakness of a single

proxy, namely the appointment of a CRO as the only measure of company's ERM.

The object of research is manufacturing companies listed on the Indonesia Stock Exchange. The selection of manufacturing companies as research objects because the manufacturing industry is an industry that has complex activities (Kuzey & Uyar, 2017). Starting from the acquisition of raw materials, processing, distribution to the sale of products to consumers and other activities, in order to maintain the sustainability of the company's supply chain, so with the extension of the stages of activity carried out by manufacturing companies, the more risks inherent. In addition, the survey results found that the implementation of risk in manufacturing companies, namely in the manufacturing industry, was the highest level of implementation after the financial and insurance sectors (CRMS, 2017).

Indonesia adheres to a two-tier system of governance so that in this study, board monitoring is divided into two, namely monitoring conducted by the board of commissioners and the board of directors. In the two-tier system, both boards have the same influence on the taking and implementation of a policy in the company. Thus, the research contribution that differentiates it from previous research is that this research not only focuses on the influence of the existence of ERM on firm value but also tries to prove whether board monitoring can strengthen the influence of ERM on firm value.

2. LITERATURE REVIEW AND HYPOTHESIS

Contingency Theory

Contingency theory is based on the harmony between the basic properties of a transaction (i.e., the specificity of assets, uncertainty, frequency) and the form of transactions that produce positive performance (Uzzi, 1999; Uzzi & Gillespie, 2002; Williamson, 1991). Risk is often associated with uncertainty within the company. Companies can not avoid it but can minimize it by managing it through

one step called risk management, which can later produce a positive performance in the company.

Furthermore, Gordon et al. (2009), found five key factors influence the relationship between ERM and company performance, namely environmental uncertainty, industry competition, company size, company complexity, and board monitoring. In the relationship between ERM and firm value, the researchers suspect that the relationship between these two variables is also consistent with board characteristics, where the presence of the board of directors and the board of commissioners in a company can have a monitoring role that can monitor how the company's risk management efforts.

Agency Theory

Agency theory is a theory commonly used in companies. Based on Jensen & Meckling (1976) the theory of property rights and the theory of finance to develop a theory of the ownership structure of the firm. We define the concept of agency costs, show its relationship to the 'separation and control' issue, investigate the nature of the agency costs generated by the existence of debt and outside equity, demonstrate who bears these costs and why, and investigate the Pareto optimality of their existence. We also provide a new definition of the firm, and show how our analysis of the factors influencing the creation and issuance of debt and equity claims is a special case of the supply side of the completeness of markets problem. The directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion,

therefore, must always prevail, more or less, in the management of the affairs of such a company. Adam Smith, *The Wealth of Nations*, 1776, Cannan Edition. (Modern Library, New York, 1937, there are agency problems related to the contract between the manager (agent) and the owner (principal) of the company. Three agency problems exist, namely: agency problems between managers and shareholders, agency problems between shareholders and creditors, and agency problems between companies and consumers. Miller & Sardais (2011) states that executives are effectively monitored/given incentives to take responsible action. However, sometimes agents exploit companies and then use the information for the benefit of certain parties, to minimize the agency conflict, there will be a cost called agency cost (Jensen & Meckling, 1976). One form of agency cost is the monitoring cost which is used to monitor the agent, whether the agent has acted in accordance with the principal's interests by accurately reporting all company activities, one of which is an activity related to the company's social and environmental activities. The link with risk management was investigated by Kajüter & Kulmala (2005) that risk management can minimize information asymmetry and contribute to preventing opportunistic behaviour from company managers. Schroeck (2002) also believes that the application of risk management can reduce agency costs and increase firm value.

Firm Value

Firm Value or known as market value has a relationship with the company because the value of this company can provide maximum prosperity to shareholders through an increase in the company's stock price. Faleye (2007) examines classified boards, firm value, and managerial entrenchment which shows that classified boards are associated with significant reductions in firm value and this relationship applies to companies

that relate to the benefits of institutional stability.

Various policies can be carried out by company management to increase the value of the company through increasing the prosperity of owners and shareholders as reflected in share prices Brigham & Houston (2012). One of the efforts that can be carried out by the company management is to carry out risk management practices. An assessment of firm value is also carried out by Pérez-González & Yun (2013), which shows that an active risk management policy leads to an increase in firm value.

Enterprise Risk Management (ERM)

Several definitions explain the concept of ERM. Nocco & Stulz (2006) defines ERM as a risk management approach, where all risks will be considered carefully and handled with structured action. Verbrugge, Owens, & Megginson (1999) defines ERM as a holistic effort in dealing with risk, and also is a management effort in increasing firm value. ERM activities that are structured encourage management to understand the uncertainties faced by the company until finally being able to handle these uncertainties. The successful use of ERM is influenced by several factors, such as the mentality of members, oversight carried out at every level of management, and also the breadth and complexity of the company's activities.

Ai Ping & Muthuveloo (2015) conducted a study in Malaysia by assessing risk management practices related to satisfaction (policy disclosure and risk management by the COSO ERM framework). The opinion that companies need to disclose much information related to risk because this information will help investors make better decisions, especially for the achievement of corporate goals. Companies in Malaysia will benefit from the COSO-ERM framework in evaluating risk weaknesses so that they can be corrected for the better. Furthermore, research by Carey (2001) also revealed that there are risks to the company if it does not

implement risk management, such as the company's financial problems that will be in a state of uncertainty.

Board Monitoring

Board monitoring is a form of responsibility carried out by the board of directors and the board of commissioners in the company. One of the principles of good corporate governance according to the OECD in the Forum for Corporate Governance in Indonesia (2001) states that the framework for corporate governance must ensure strategic guidance, supervision of management performance, as well as an explanation regarding the responsibilities of company commissioners, conveyed to the company and shareholders. Thus, the presence of the BoC and BoD in the company becomes a representative of shareholders who will later monitor the activities and business of a company.

Raber (2003) stated that management has identified and brought the main risks faced by the company to the attention of the board and also has a plan to deal with those risks. So, to maintain the independence of the board, separate mechanisms must be established for analyzing and monitoring risks, as well as establishing policies related to the risks that occur, so that they will be effective in fulfilling responsibilities in general oversight. Kiel & Nicholson (2002) discussed the agenda of the board, namely for the board to make a clear identification of various types of information/discussion/decisions, such as regarding resolution in the company's objectives. Not only the quality of information and compliance issues, but strategic decision making must be based on previous follow-up information and analysis.

ERM and Firm Value

Concerning firm value, some previous studies mention that risk management is a tool to suppress the uncertainty that arises from the company's activities, which affect the formation of firm value. One of them is a study conducted by Hoyt & Liebenberg (2011) which shows that ERM is positively related to firm value. The same thing was

also shown by Florio and Leoni (2017), where companies with an advanced level of ERM implementation had higher performance, both financial performance and market valuation.

Baxter et al. (2013), in his study found that ERM quality is positively related to firm value based on a sample of US banks and insurance companies, but only during the global financial crisis. Bertinetti, Cavezzali, & Gardenal (2013) also found similar results between ERM adoption and firm value in a sample of European financial and non-financial companies. In addition, Pérez-González & Yun (2013) found that active risk management policies lead to an increase in firm value. Based on an analysis of the findings of previous researchers, it can be said that risk management has real consequences for company output. So hypothesis 1 is:

H1: Enterprise Risk Management has a positive effect on firm value.

ERM, Firm Value, and Board

Because Indonesia uses a two-tier governance system, so in this study, there was a separation between BoC and BoD. Ingley & van der Walt (2008), examines risk management monitoring and supervision in New Zealand that there are no legislative or regulatory requirements for companies to report formally on a risk management system based on practice, so little is known about the responsibilities carried out by the board regarding monitoring and monitoring risk management in the company.

Gordon et al. (2009), state that monitoring conducted by the board can be a key factor influencing the relationship between ERM and company performance. Also, Verbrugge et al. (2003) stated that the successful use of ERM is influenced by supervision conducted at every level of management, one of which is the company's board of directors.

In a survey, CRMS (2017), also found that according to respondents surveyed, company directors held the highest responsibility in carrying out risk

management of companies in Indonesia. The survey results mean that the directors are very influential in the ERM process. So that researchers suspect that with the influence of this strong directors, the monitoring role carried out by the directors will affect the relationship between ERM and firm value. Because the risk management responsibility lies with the directors, the directors will significantly affect ERM in the company. So hypothesis 2a is:

H2a: The monitoring role of the board of directors strengthens the relationship between ERM and firm value.

Regarding the responsibilities of the commissioners, the role of the board of commissioners in risk management is significant. Raber (2003) identifies the role of the board of commissioners as overseeing, monitoring, and evaluating risk management decisions. This responsibility is related to risk management in dangerous activities or conditions, such as the risk of loss. Furthermore, Raber (2003) also discusses that one of the responsibilities of BoC is to create and implement risk policies, as well as carry out risk oversight (a component of risk management that is often forgotten). Thus, the BoC must ensure that management has identified and made the main risks faced by the company the attention of the board so that it then draws up a plan for its handling. It means that the board of commissioners as an independent entity must have its own set of mechanisms for analyzing and monitoring risks and risk policies in order to fulfil general oversight responsibilities. So hypothesis 2b is:

H2b: The monitoring role of the board of commissioners strengthens the relationship between ERM and firm value.

3. METHODS

For sample selection, this study uses a non-probability sampling technique with a purposive sampling method, which is to determine the research sample with specific sample criteria. The criteria used

by researchers in the selection of research samples are as follows: (1) Manufacturing sector companies listed on the Indonesia Stock Exchange in 2014-2017; (2) The company contains and publishes annual reports that end December 31, 2014-2017, period; (3) The company has complete financial and non-financial data related to research variables. The final sample of the study was 118 companies with a period of 4 years, so using panel data, this study had 472 research observations.

Research Variables and Operationalization Variables

Dependent Variable

The dependent variable used in this study is the firm value measured by Tobin's q. The use of Tobin's q as a proxy for a company's market value for several reasons. First, this is a forward-looking measure because it is based on stock market prices. Second, market-based actions reflect the ideas of external stakeholders and may better capture the long-term value of ERM activities. Third, Tobin's q can be used to compare companies in the industry because it is not affected by accounting conventions (Chakravarthy, 1986) that are based on a firm's profitability, for evaluating its strategic performance. Two other measures, one that attempts to assess the quality of a firm's transformations (and not merely its outcomes. Tobin's q value can be calculated as the company's market capitalization plus the book value of debt, divided by the book value of total assets, which is shown in the following equation:

$$\text{Tobin's } q = \frac{(\text{MV of Equities} + \text{BV of Liabilities})}{(\text{Total Assets})}$$

Independent Variable

The independent variable used in this study is Enterprise Risk Management (ERM) conducted by the company. ERM is measured by manually analyzing content on ERM items in an annual report following research by Florio & Leoni (2017). Then scoring is done by measuring the ERM score using a two-step approach (Florio & Leoni, 2017). First, the researcher

separately considers six dummy variables that represent the ERM component; Second, each variable is given a score, and then the sum of the six scores results in an ERM score.

ERM Score (ERMscore) is the sum of all six dummy variables and ranges from 0 to 6. The following six variables are (Table 1).

Moderation Variable

The moderating variable in this study is monitoring conducted by the board. The proxy of the monitoring board used follows the measurements of Gordon et al., (2009), namely the number of boards compared to the natural logarithm of sales.

To control the scale effect of each company, the sum of each BoD and BoC is divided by the natural logarithm of sales (Gordon et al., 2009). The following is the measurement method used as a monitoring board proxy:

$$BOD\ Monitoring = \frac{(Total\ Board\ of\ Direction)}{(Ln\ Sales)}$$

$$BOC\ Monitoring = \frac{(Total\ Board\ of\ Commissioner)}{(Ln\ Sales)}$$

Variable Kontrol

The relationship between market value and ERM can be influenced by several other variables that need to be controlled.

Three control variables in this study are company profitability as measured by ROA, corporate leverage as measured by debt to total asset ratio, and company size as measured by the natural logarithm of total company assets. These three control variables were selected based on previous literature (Ducassy & Montandrou, 2015; Liu & Zhang, 2017; Nekhili et al., 2017).

RESEARCH MODEL

The research model used in testing the hypotheses in this study is as follows (Table 2).

$$Tobin's\ q = \beta_0 + \beta_1 ERM_{it} + \beta_2 BODMon_{it} + \beta_3 BOCMon_{it} + \beta_4 BODMon * ERM_{it} + \beta_5 BOCMon * ERM_{it} + \beta_6 ROA_{it} + \beta_7 LEV_{it} + \beta_8 SIZE_{it} + \epsilon_{it}$$

4. RESULT AND DISCUSSION

Descriptive statistics

Descriptive analysis aims to present concise information about the variables related to the study. The following Table 3, presents the results of the descriptive analysis for each research variable.

The results of the descriptive analysis in Table 2 show that there were 472 observations used in this study. The results in the above table also show a descriptive analysis of Tobin's Q variable, which is a proxy for measuring firm value, which has an average value of 1.67. These results indicate that the average manufacturing company in Indonesia can be used as a

Table 1. ERM Scoring Items

	Definitions
CRO	Dummy variable equal to 1 if the company has appointed a chief risk officer or an ICR officer, and 0 vice versa;
RiskCom	Dummy variable equal to 1 if the company has appointed a risk committee or an ICR committee, and 0 vice versa;
RCtoBoD	Dummy variable equal to 1 if the risk is reported to the commissioner/ director, and 0 vice versa;
RAfrequency	Dummy variable equal to 1 if the company performs the risk assessment procedure periodically, and 0 vice versa;
RAlevel	Dummy variable equal to 1 if the company carries out the risk assessment procedure not only at the entity level, and 0 vice versa.
RAmethod	Dummy variable equal to 1 if the company adopts both qualitative and quantitative methods of risk assessment, and 0 vice versa;
ERM_Score	The total score of the six ERM measurement items

Source: Processed data

Table 2. Research Model

TOBINS Q _{it}	= Firm Value <i>i</i> in year <i>t</i>
ERM _{it}	= Enterprise Risk Management in company <i>i</i> in year <i>t</i>
BODMON _{it}	= Monitoring conducted by the Board of Directors of the company <i>i</i> in year <i>t</i>
BOCMAN _{it}	= Monitoring conducted by the Board of Commissioners of the company <i>i</i> in year <i>t</i>
BODMON*ERM _{it}	= The moderating variable is Board of Directors monitoring of company <i>i</i> in year <i>t</i>
BOCMON*ERM _{it}	= The moderating variable is Board of Commissioners monitoring of company <i>i</i> in year <i>t</i>
ROA _{it}	= Firm Performance <i>i</i> in year <i>t</i>
LEV _{it}	= Leverage <i>i</i> in year <i>t</i>
SIZE _{it}	= Firm Size <i>i</i> in year <i>t</i>
ε _{it}	= error term

Source: Processed data

right investment tool because Tobin's Q value of more than 1 indicates that the company can be used as a good investment tool by investors. The maximum value of Tobin's Q is 13.88, indicating that this company has the highest firm value of all manufacturing companies that are the research samples. This highest value is owned by Unilever Indonesia Tbk. Also, there is a minimum of Tobin's Q value of 0.11 owned by one of the companies in the manufacturing industry, which indicates that the company has the lowest firm value among all study samples.

The next descriptive analysis is the enterprise risk management (ERM) variable which is an independent variable in this study. The table 3, shows that the average manufacturing company in Indonesia has an ERM score of 3 points. It can be seen that there are some companies that have a perfect score of 6, and there are even some companies that do not have an ERM score at all, which is mostly found in the company's 2014 annual report. This indicates that in 2014 the company did not put too much emphasis the importance of disclosure related to risk management, but increasingly here, especially in 2017, all companies have made disclosures related to risk management, even with different levels of disclosure.

Next is the moderating variable in this study, namely board monitoring through the presence of the board of directors and the board of commissioners. For monitoring conducted by the board of directors (BODMON), in this study sample, the average company has a point of 17%, with the highest point of 52% and the lowest point of 3%. This indicates that the average attendance of the board of directors of manufacturing companies in Indonesia can conduct supervision in the company's business by 17% through sales made by the company.

For monitoring variables conducted by the board of commissioners (BOCMON) in this study sample, the average company has a point of 14%, with the highest point of 45% and the lowest point of 6%. This indicates that the average attendance of the board of commissioners in manufacturing companies in Indonesia can conduct oversight in the company's business by 14%.

The subsequent descriptive analysis is related to the control variables used in this study, including ROA, leverage, and company size. For ROA, the average company has a profit rate of assets owned by 4.16, a maximum value of 55.26 and the lowest value of -22.45. This indicates that the average manufacturing company in

Indonesia can generate profits from each of its assets of 4.16. On the other hand, some companies have a negative ROA value, which indicates that some manufacturing companies are experiencing losses.

For leverage measured using the ratio of debt to total assets, the average value is 29.64, which shows that manufacturing companies in Indonesia have a reasonably balanced funding structure. Besides, there are also companies that 88% of their funding sources come from liabilities, which is one of the companies in the manufacturing industry because of the leverage ratio of 258.7, and there are also companies that have reasonably low leverage of 0.16.

The final control variable is company size measured from the natural logarithm of total assets. The average manufacturing company in Indonesia has a company size of 28.45 when judged by the total assets owned. The company that has the largest company size with a value of 33.20 or equivalent to total assets of 261,855 trillion and the smallest company size is 25.25 or equivalent to a total asset of 92 billion.

DISCUSSION

Following are the results of the research model regression regarding the effect of ERM on firm value and the role of the monitoring board in moderating the relationship between ERM and firm value with the fixed effect method presented in table 4.

Overall, if seen from the Prob (F-Statistic) value, all independent variables and control variables contained in the model simultaneously affect the firm value, because the significance value is less than 5% (0.0010). As for the ability of the independent variable and the control variable in explaining the dependent variable, the value is 0.0742 or 7.42%. This indicates there are still many other factors that can affect the market value of a company, in addition to the variables tested.

The test results show evidence that ERM has a significant positive effect on firm value at the 5% level, which is equal to 0.014. This indicates that the higher the ERM score of a company shows that the company has a high commitment related to risk management so that the impact on the higher value of the company. The results of this study are supported by research conducted by Hoyt & Liebenberg (2011) and Florio & Leoni (2017), in which their results show that companies with higher levels of ERM implementation have higher performance, both financial performance and market evaluation. Based on contingency theory, this is because the risk management efforts undertaken by companies through ERM become a tool that can reduce the uncertainty arising from company activities, which affects the formation of firm value (Uzzi, 1999;

Table 3. Descriptive Statistics

Variable	N	Mean	Std. Dev	Min	Max
TOBIN'S Q	472	1.670803	1.794358	0.112893	13.88067
ERM	472	2.927966	1.680127	0	6
BODMON	472	0.176039	0.075731	0.036431	0.526917
BOCMON	472	0.143089	0.058624	0.062726	0.454935
ROA	472	4.159593	8.668584	-22.4532	55.25747
LEV	472	29.64186	28.00833	0.160813	258.774
SIZE	472	28.45181	1.596130	25.21557	33.32081

Note: TOBIN'S Q = proxy measurement of firm value; ERM= enterprise risk management, as a proxy for risk management; BODMON= Monitoring by the board of directors; BOCMON= Monitoring by the board of commissioners; ROA= return on asset, as a proxy for company profitability; LEV= leverage; SIZE= firm size, measured using the natural logarithm of total assets.

Source: Processed data

Uzzi & Gillespie, 2002; Williamson, 1991). This result is also consistent with research conducted by Schroeck (2002), who argues that if linked to agency theory, the application of risk management can reduce agency costs and increase firm value. So, from some of these explanations, it can be concluded that hypothesis 1 in this study was accepted.

For hypothesis 2a, the results in table 3 show that the monitoring role carried out by the board of directors (BODMON * ERM) can weaken the influence of ERM on firm value. This can be seen from the negative coefficient with a significance of 10%, namely 0.059. This indicates that the more presence of the board of directors in a company, the more parties can have a monitoring role in the company. However, the monitoring role carried out by the board of directors does not seem effective because it weakens the influence of ERM on the company's value.

If it is related to agency theory, Jensen (1993) political, regulatory, and economic forces have been changing the worldwide economy in a fashion comparable to the changes experienced during the nineteenth century Industrial Revolution. As in the nineteenth century, we are experiencing

declining costs, increasing average (but decreasing marginal states that too many board directors will adversely affect company performance because they are vulnerable to conflicts of interest and the many parties who have the opportunity to become free riders in their responsibilities as directors, so that the board of directors who have a useful role in carrying out their responsibilities, such as conducting monitoring within the company, are only a part of the people.

Lipton & Lorsch (1992) state that there are some shortcomings if the number of boards of directors is large. The large size of the BoD will result in a lack of meaningful discussion because the higher the number of BoD the more different interests and thoughts so that it is difficult to reach consensus for each company decision making (Kassinis & Vafeas, 2002). An increasing number of directors will make the monitoring function within the company also less focused, including in the case of corporate risk management. In other words, the more boards of directors in a company, the role of monitoring are not effective so that it weakens the influence of ERM on firm value.

Table 4. Panel Data Regression Results

TOBIN'S Q	Coef	Prob	Sig
ERM	.0477182	0.014	**
BODMON	2.109409	0.124	
BOCMON	2.354958	0.146	
BODMON *ERM	-1.268596	0.059	*
BOCMON *ERM	.4199641	0.234	
ROA	.0282738	0.048	**
LEV	.0067956	0.059	*
SIZE	-.2283381	0.089	*
Number of Observation	472		
Adjusteds R-Squared	0.0742		
Prob (F-Statistic)	0.0010		

*, ** dan *** indikasi signifikansi pada 10%, 5% dan 1%.

Note: TOBIN'S Q = proxy measurement of firm value; ERM= *enterprise risk management*, as a proxy for risk management; BODMON= Monitoring by the board of directors; BOCMON= Monitoring by the board of commissioners; ROA= *return on asset*, as a proxy for company profitability; LEV= *leverage*; SIZE= firm size, measured using the natural logarithm of total assets.

Source: Processed data

Previous studies such as Gordon et al., (2009) stated that monitoring conducted by BoD could be a key factor influencing the relationship between ERM and firm performance. Besides, Verbrugge et al. (1999) stated that the successful use of ERM is influenced by supervision conducted at every level of management, one of which is the company's board of directors. This means that it can be analyzed that the existence of a board of directors in companies in Indonesia has not been effective, especially for companies that have a large number of board directors. So, from some of these explanations, it can be concluded that hypothesis 2a in this study was rejected.

Furthermore, to answer hypothesis 2b, namely the interaction between risk management and monitoring conducted by the board of commissioners (BOCMON * ERM) showed insignificant results. This can be seen from the significance, which is higher than 10%, which is equal to 0.234. This indicates that more or less the commissioners are not very influential in strengthening or weakening the influence of ERM on the company's value. This condition can be caused by the commissioners in the company not having the role of executor or decision-maker. Also, the knowledge of the commissioners regarding the state of the company is not as in-depth as the knowledge possessed by the directors of the company, because the commissioners do not directly involve in handling and managing the company, this is what causes the monitoring role carried out by BoC to be insignificant in moderating the influence of ERM on firm value. So, from some of these explanations, it can be concluded that hypothesis 2b in this study was rejected.

Related to control variables, the three control variables used in this study are ROA, leverage, and company size showed a significant influence on firm value even with different coefficient directions. ROA has a significant positive effect which shows the greater the ROA ratio of a company, the higher the value of the company. This

result can be seen from the direction of the coefficient, which is positive with a significance of 5% (0.048). These results are consistent with research conducted by Obradovich & Gill (2012), which shows that the higher the performance of a company will have an impact on the higher value of the company. In other words, the higher the profit or rate of return of a company's assets will cause investors to have a good view of the company itself, thereby causing an increase in stock prices and firm value (Amarjit & Neil, 2011). This is because investors' decisions to invest in a company usually depend on how much the company produces a return on the investment they will invest in, so investors will see the company's profitability ratio for the first time, namely ROA (Obradovich & Gill, 2012).

The second control variable, leverage, which is measured by the ratio of debt to total assets, shows a positive and significant effect on the value of the company, so the higher the leverage level of a company, the greater the value of the company. This can be seen from the direction of the coefficient, which is positive with a significance of 10% (0.059). This finding is supported by research conducted by Wang & Sarkis (2017) which shows that if leverage is associated with signalling theory, the positive influence of leverage on firm value gives a signal to investors that companies with high leverage indicate that the company can meet debt covenant. Also, companies with high leverage give signals to investors that the company will do something, such as projects or investments from funding through the debt it gets.

The third control variable is company size measured by the natural logarithm of total assets. In table 3, the firm size variable shows a negative and significant effect on the value of the company, which indicates that the greater a company, the value of the company decreases. This can be seen from the direction of the coefficient which is negative with a significance level of 10% (0.089). These results indicate that investors

consider large companies to have higher complexity. An increasingly complex company will pose increasingly greater risks, both business risks and reputation risks. This is because the bigger a company, the company will get the most attention from the community, so the company will try to maintain its reputation. Also, the larger the company, the company will need substantial funding, one of which is funding through debt, which in turn can increase the risk of liquidity and solvency of the company. Thus, an investor's decision to invest in a company depends on how much the company generates a return on the investment they will invest and the risk they will get. Large companies with several risks such as business risk, reputation, liquidity, and solvency are what make investors reluctant to invest, thereby reducing the value of the company (Becker-Blease, Kaen, Etebari, & Baumann, 2010).

5. CONCLUSION

The test results in the study obtained evidence that the application of enterprise risk management (ERM) in the company proved to be able to increase the value of the company. This shows that the company gets its own value from the commitment in the implementation of risk management in the company. So, if it is associated with agency theory, then the risk management efforts undertaken by companies through ERM become a tool that can reduce the uncertainties that arise from company activities and conflicts that occur, which affect the formation of firm value. Furthermore, the monitoring efforts undertaken by the company through the monitoring role carried out by the board of directors are proven to moderate the effect of the implementation of ERM on the company's value. However, the test results show a negative direction, which means the moderating role of the board of directors weakens the influence of ERM on firm value. This means that an excessive number of directors will adversely affect

the company's performance because it is prone to conflicts of interest and the many parties who have the opportunity to become free riders in their responsibilities as directors so that the board of directors has an effective role in carrying out their responsibilities, such as carrying out monitoring in company risk management is only done by some people. On the other hand, the monitoring efforts undertaken by companies through the monitoring role carried out by the board of commissioners have not been proven to moderate the effect of ERM on firm value. This indicates that more or less the commissioners did not significantly influence the moderating influence of ERM on the company's value. This study also has some suggestions for further research that cannot be realized in this study and can be used as a gap for future researchers. First, because this study only measures ERM using six categories of measurements following research conducted by Florio & Leoni (2017), subsequent studies can use other ERM measurements that are more complex and contain many categories of company risk management such as conducting content analysis using ISO 31000 guidelines: 2009 Risk Management - Principles and Guidelines. For the research sample, this research is only limited to manufacturing companies listed on the Indonesia Stock Exchange, so the results of this study cannot be generalized to other industrial sectors. For further research in order to expand the research analysis unit so that the findings obtained related to the influence of ERM conducted can be generalized to several companies, not limited to just one sector. This study only looks at one aspect of COSO ERM, namely monitoring, which in this study is used as a moderating variable. Further research can broaden the discussion by considering other aspects of COSO ERM such as internal environment, control activities, risk response, and other aspects of COSO ERM.

REFERENCES

- Ai Ping, T., & Muthuveloo, R. (2015). The impact of enterprise risk management on firm performance: Evidence from Malaysia. *Asian Social Science*. <https://doi.org/10.5539/ass.v11n22p149>
- Amarjit, G., & Neil, M. (2011). Factors that Influence Financial Leverage of Canadian Firms. *Journal of Applied Finance and Banking*, 1(2), 19–37.
- Baxter, R., Bedard, J. C., Hoitash, R., & Yezegel, A. (2013). Enterprise risk management program quality: Determinants, value relevance, and the financial crisis. *Contemporary Accounting Research*. <https://doi.org/10.1111/j.1911-3846.2012.01194.x>
- Beasley, M., Pagach, D., & Warr, R. (2008). Information conveyed in hiring announcements of senior executives overseeing enterprise-wide risk management processes. *Journal of Accounting, Auditing and Finance*. <https://doi.org/10.1177/0148558X0802300303>
- Becker-Blease, J. R., Kaen, F. R., Etebari, A., & Baumann, H. (2010). Employees, firm size and profitability in U.S. manufacturing industries. *Investment Management and Financial Innovations*. <https://doi.org/10.2139/ssrn.382402>
- Bertinetti, G. S., Cavezzali, E., & Gardenal, G. (2013). The Effect of the Enterprise Risk Management Implementation on the Firm Value of European Companies. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2326195>
- Brigham, E. F., & Houston, J. F. (2012). *Fundamentals of financial management*. Cengage Learning.
- Callahan, C., & Soileau, J. (2017). Does Enterprise risk management enhance operating performance? *Advances in Accounting*. <https://doi.org/10.1016/j.adiac.2017.01.001>
- Carey, A. (2001). Effective risk management in financial institutions: the turnbull approach. *Balance Sheet*. <https://doi.org/10.1108/09657960110696014>
- Chakravarthy, B. S. (1986). Measuring strategic performance. *Strategic Management Journal*. <https://doi.org/10.1002/smj.4250070505>
- Ducassy, I., & Montandrou, S. (2015). Corporate social performance, ownership structure, and corporate governance in France. *Research in International Business and Finance*. <https://doi.org/10.1016/j.ribaf.2015.02.002>
- Faleye, O. (2007). Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics*. <https://doi.org/10.1016/j.jfineco.2006.01.005>
- Farrell, M., & Gallagher, R. (2015). The Valuation Implications of Enterprise Risk Management Maturity. *Journal of Risk and Insurance*. <https://doi.org/10.1111/jori.12035>
- Florio, C., & Leoni, G. (2017). Enterprise risk management and firm performance: The Italian case. *British Accounting Review*. <https://doi.org/10.1016/j.bar.2016.08.003>
- Gordon, L. A., Loeb, M. P., & Tseng, C. Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy*. <https://doi.org/10.1016/j.jaccpubpol.2009.06.006>

- Hoyt, R. E., & Liebenberg, A. P. (2011). The Value of Enterprise Risk Management. *Journal of Risk and Insurance*. <https://doi.org/10.1111/j.1539-6975.2011.01413.x>
- Indonesia, C. (2017). Survey Nasional Manajemen Risiko 2017. CRMS Indonesia.
- Ingley, C., & van der Walt, N. (2008). Risk Management and Board Effectiveness. *International Studies of Management & Organization*. <https://doi.org/10.2753/imo0020-8825380302>
- Jensen, M. C. (1993). The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems. *The Journal of Finance*. <https://doi.org/10.2307/2329018>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kajüter, P., & Kulmala, H. I. (2005). Open-book accounting in networks. Potential achievement and reasons for failures. *Management Accounting Research*. <https://doi.org/10.1016/j.mar.2005.01.003>
- Kassinis, G., & Vafeas, N. (2002). Corporate boards and outside stakeholders as determinants of environmental litigation. *Strategic Management Journal*. <https://doi.org/10.1002/smj.230>
- Kiel, G. C., & Nicholson, G. J. (2002). *Boards that work: A new guide for directors*. McGraw Hill.
- Kleffner, A. E., Lee, R. B., & McGannon, B. (2003). The Effect of Corporate Governance on the Use of Enterprise Risk Management: Evidence From Canada. *Risk Management <html_ent Glyph="@amp;" Ascii="&"/> Insurance Review*. <https://doi.org/10.1111/1098-1616.00020>
- Kuzey, C., & Uyar, A. (2017). Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2016.12.153>
- Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance: Business source. *Business Lawyer*. <https://doi.org/10.1525/sp.2007.54.1.23>
- Liu, X., & Zhang, C. (2017). Corporate governance, social responsibility information disclosure, and enterprise value in China. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2016.09.102>
- Miller, D., & Sardais, C. (2011). Angel agents: Agency theory reconsidered. *Academy of Management Perspectives*. <https://doi.org/10.5465/AMP.2011.61020798>
- Nekhili, M., Nagati, H., Chtioui, T., & Rebolledo, C. (2017). Corporate social responsibility disclosure and market value: Family versus nonfamily firms. *Journal of Business Research*. <https://doi.org/10.1016/j.jbusres.2017.04.001>

- Nocco, B. W., & Stulz, R. M. (2006). Enterprise Risk Management: Theory and Practice. *Journal of Applied Corporate Finance*. <https://doi.org/10.1111/j.1745-6622.2006.00106.x>
- Obradovich, J., & Gill, A. (2012). The Impact of Corporate Governance and Financial Leverage on the Value of American Firms. *International Research Journal of Finance and Economics*.
- Pagach, D. P., & Warr, R. S. (2010). The effects of enterprise risk management on firm performance. Available at SSRN 1155218.
- Pagach, D., & Warr, R. (2011). The Characteristics of Firms That Hire Chief Risk Officers. *Journal of Risk and Insurance*. <https://doi.org/10.1111/j.1539-6975.2010.01378.x>
- Pérez-González, F., & Yun, H. (2013). Risk management and firm value: Evidence from weather derivatives. *Journal of Finance*. <https://doi.org/10.1111/jofi.12061>
- Raber, R. W. (2003). The Role of Good Corporate Governance in Overseeing Risk. *Corporate Governance Advisor*.
- Sayilir, Ö., & Farhan, M. (2016). Enterprise Risk Management and Its Effect on Firm Value in Turkey. *Journal of Management Research*. <https://doi.org/10.5296/jmr.v9i1.10124>
- Schroeck, G. (2002). *Risk management and value creation in financial institutions* (Vol. 155). John Wiley & Sons.
- Sobel, P. J., & Reding, K. F. (2004). Aligning Corporate Governance with Enterprise Risk Management. *Management Accounting Quarterly*.
- Uzzi, B. (1999). Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review*. <https://doi.org/10.2307/2657252>
- Uzzi, B., & Gillespie, J. J. (2002). Knowledge spillover in corporate financing networks: Embeddedness and the firm's debt performance. *Strategic Management Journal*. <https://doi.org/10.1002/smj.241>
- Verbrugge, J., Owens, W., & Megginson, W. (1999). State ownership and the financial performance of privatized banks: An empirical analysis. In *conference Proceedings of a Policy research Workshop held at the World Bank* (pp. 15–16). Citeseer.
- Wang, Z., & Sarkis, J. (2017). Corporate social responsibility governance, outcomes, and financial performance. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2017.06.142>
- Williamson, O. E. (1991). Strategizing, economizing, and economic organization. *Strategic Management Journal*. <https://doi.org/10.1002/smj.4250121007>