



## Enterprise Risk Management, Board Financial Qualification, and Firm Value

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### ARTICLE INFO

#### Article History:

Submitted October 22<sup>nd</sup>, 2022

Revised January 26<sup>th</sup>, 2023

Accepted February 27<sup>th</sup>, 2023

Published March 8<sup>th</sup>, 2023

#### Keywords:

*Enterprise Risk Management; Firm Value, Board Financial Qualification; Moderated Regression Analysis (MRA)*

### ABSTRACT

**Purpose :** The intention of this study is to get empirical evidence regarding the effect of Enterprise Risk Management (ERM) disclosure on firm value and the effect of Board Financial Qualification (BFQ) in moderating Enterprise Risk Management (ERM) on firm value.

**Method :** This research uses content analysis with 53 samples of financial company sectors, which are banks and insurance companies listed on the Indonesia Stock Exchange during 2020. The analysis technique used is Moderated Regression Analysis (MRA).

**Findings :** The results show that ERM has a negative effect on firm value. This happens because the disclosure of risk management in banking and insurance companies in Indonesia is an obligation, so investors do not pay attention to the disclosure of risk management as a basis for assessing the company. In addition, this study also proves that BFQ is a variable that is able to moderate the effect of ERM on firm value. The board of directors with a financial education background has better knowledge of risk management thereby strengthening the implementation of ERM in a company.

**Novelty :** This study using ERM disclosure items based on COSO 2017. While previous research based on COSO 2009.

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### INTRODUCTION

Companies aim to increase their "firm value" as it reflects the overall quality of the company (Cristofel, 2021; Oktarina, 2018). The main goal for companies is to increase investor income, which can be achieved by increasing firm value (Makaryanawati et al., 2016). This can be done by optimizing performance as reflected in financial statements (Cristofel, 2021). Additionally, good firm value leads to good returns for investors through dividends, share value, and retained earnings. To further increase firm value, companies can implement Enterprise Risk Management (ERM) which helps to prevent potential losses (Arieska, 2009; Hoyt & Liebenberg, 2011).

The Covid-19 pandemic has challenged companies to manage the risks of an unpredictable event (Wu et al., 2020). The pandemic emerged unexpectedly and has been called "the black swan" (Mishra, 2020). It has caused massive impacts on the global economy since its probability was hard to predict (Taleb, 2007). Anton & Nucu (2020) mentions that the pandemic has taught us the importance of studying ERM effectiveness as part of risk management to create a process within an organization to anticipate and manage adverse risks, with the ultimate goal of increasing or maintaining firm value under difficult times and unpredictable situations (Hoyt & Liebenberg, 2011).

Banking and insurance are included in the financial sector and are more likely to implement ERM because they are aware of the potential risks they may bear (Beasley et al., 2005; Gatzert & Wesker, 2012; Hoyt & Liebenberg, 2011; Lechner & Gatzert, 2017). In addition, companies in the financial sector also aim to increase trust in the capital market, so they present an adequate and transparent risk management system (Hoyt & Liebenberg, 2008). Most companies in Indonesia have implemented risk management, especially those in the finance sector, including banks and insurance companies, as regulated by the Financial Services Authority (Otoritas Jasa Keuangan-OJK) (Suhartadi, 2021). OJK's regulation Number 18/POJK.03/2016 regulates the implementation of Risk Management for Commercial Banks and regulation Number 1/POJK.05/2015 regulates Risk Management for Non-Bank Financial Service Institutions (Lembaga Jasa Keuangan Non-Bank - LJKNB). Both Commercial Banks and LJKNB must report their risk management to OJK. One of the LJKNB referred to in the regulation is insurance companies.

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Previous studies show that ERM positively affected companies (Bohnert et al., 2018; Hoyt & Liebenberg, 2011; Lechner & Gatzert, 2017; Silva et al., 2018; Soetedjo et al., 2018). As an example, Silva et al. (2018) mentions that ERM is significantly correlated with firm value because ERM creates value for companies by reducing funding due to financial constraints, taxes, and issues related to information asymmetry. In addition, ERM lowers the capital cost of companies by reducing systematic risks (Xu, 2018). First, ERM reduces capital cost by increasing the available information related to risk profile of the company—the information can be shared with investors to reduce information asymmetry leading to lower capital cost. Second, ERM reduces capital cost by reducing systematic risks of companies. Third, ERM lowers the possibility for companies to need high external costs (Xu, 2018).

However, Janor et al. (2017) and Cristofel (2021) show that ERM has a negative impact on firm value. One of the reasons behind these mixed results is that the existing studies used different samples of firms, different timescales, and different proxies for ERM (Anton, 2018). In addition, most of the previous studies only considered the direct relationship between ERM and firm value (Chen et al., 2020; Cristofel, 2021; Hoyt & Liebenberg, 2011; Janor et al., 2017; Lechner & Gatzert, 2017; Silva et al., 2018; Soetedjo et al., 2018; Xu, 2018). Therefore, this study tried to implement the suggestion from Saeidi (2021) to add corporate governance as a moderating variable that can influence ERM on firm value.

Corporate governance in this study is proxied by the qualification of board finance committee members. Sithipolvanichgul (2021) reveals that directors with a degree in finance are considered to have more knowledge related to risk management, which is expected to strengthen the impact of ERM on firm value. Bantel & Jackson (1989) and Wiersema & Bantel (1992) show that CEOs with high educational attainment are more able to understand and produce substantial progress within the company.

Stewardship theory proposes a common interest between principals and agents (Donaldson & Davis, 1991); as such, company agents will be motivated to do their best for the principal's interest (Faisal & Nadya, 2020). Executives believe that satisfying the interests of shareholders is similar to fulfilling their personal interests (Lane et al., 2016). The function of agents in stewardship theory is maximized when shareholder wealth is maximized (Pastoriza & Ariño, 2008). This is in line with the principal's goal because the agent will try to protect and maximize the well-being of stakeholders through excellent company performance (Faisal & Nadya, 2020). ERM is a process of building a risk strategy that requires company management to identify, assess, and manage risks that can have an impact on firm value (Meulbroek, 2002).

Conceptually, ERM can increase firm value in two ways. First, through an assessment of all risks, companies can better illustrate their risk portfolio (Soetedjo et al., 2018). Second, through ERM, companies can prioritize risk factors in line with their risk appetite (Lin et al., 2012). ERM allows companies to manage various risks in an integrated manner (Hoyt & Liebenberg, 2011). Referring to Falkner & Hiebl (2015), ERM has a number of inter-related stages. First, it starts by identifying risks to reveal threats and opportunities that can affect organizational performance. Then, a risk assessment is carried out, with an assessment of the probability (frequency of events) and severity (consequences as the possibility of damage caused) of the previously identified risks. The risk assessment results are crucial for the next stage, like in making decisions on the best risk management method to apply (Bromiley & Rau, 2016).

Empirical studies on how ERM increases firm value have been carried out in various countries, including the U.S. (Beasley et al., 2005; Hoyt & Liebenberg, 2011; Xu, 2018), Germany (Lechner & Gatzert, 2017), Brazil (Silva et al., 2018), Europe (Bohnert et al., 2018), Malaysia (Janor et al., 2017), Taiwan (Chen et al., 2020), Vietnam (Duong et al., 2020), France (Khan et al., 2016), Romania (Anton, 2018). Most studies on the effect of ERM on firm value focus on the banking and insurance sectors (Beasley et al., 2005; Bohnert et al., 2018; Hoyt & Liebenberg, 2011; Xu, 2018). Lechner & Gatzert (2017) state that companies from both sectors are more likely to establish an ERM program due to stricter regulations and risk awareness.

Most studies show that ERM positively increases firm value (Bohnert et al., 2018; Duong et al., 2020; Khan et al., 2016; Lechner & Gatzert, 2017; Silva et al., 2018; Soetedjo et al., 2018). ERM has a positive impact on companies because it can improve business performance and ensure the company's going concern (Annamalah et al., 2018).

### **H<sub>1</sub>: Enterprise Risk Management affects Firm Value**

According to COSO, ERM is a mechanism influenced by management, the board of directors, and other personnel who carry out company activities (Desender, 2009). The board of directors takes on a supervisory role to ensure that the selected corporate risk management strategy is implemented according to established guidelines (Sithipolvanichgul, 2021). Directors with a degree in finance are expected to strengthen the impact of ERM on firm value because they are considered to have better knowledge of risk management (Sithipolvanichgul, 2021). These abilities consist of observable characteristics (such as educational background and work experience) and unobservable traits (such as leadership and entrepreneurial skills) (Bhagat et al., 2010; Forbes & Milliken, 1999; Rindova, 1999). Bhagat et al. (2010) argues that because unobservable characteristics are relatively difficult to identify and measure, observable characteristics play an essential role. Hambrick & Mason (2013) also states that observable characteristics are valid proxies for cognitive orientation, values, and knowledge base, which can substantially influence the decision-making of these directors.

**Table 1.** Sample Selection Criteria

No.	Sample Criteria	Total
1.	Insurance and banking companies listed on the IDX in 2020	58
2.	Companies that do not publish annual reports for 2020	0
3.	Companies that do not have complete data regarding total assets, total liabilities, number of outstanding shares, share prices, number of directors, and educational background of directors	0
<b>Total Sample</b>		<b>58</b>

This study employed the educational background of directors: having degrees in finance (accounting, finance, management, and business administration) and being graduates of the faculty of economics for both undergraduate and postgraduate study programs, referring to Darmadi (2013). The business degrees the board of directors has can strengthen the cognitive base and skills in strategy, marketing, quality control, and financial management (Forbes & Milliken, 1999). Darmadi (2013) states that the educational background of the members of the board of directors is vital to support their work. Tseng & Jian (2016) also reveals that the disclosed educational background can be beneficial for investors to create firm value.

## H<sub>2</sub>: Board Financial Qualification moderates (BRQ) the effect of ERM disclosure on Firm Value

### RESEARCH METHODS

This study uses secondary data from the annual report and the IDX website. The samples were banking and insurance companies listed on the IDX in 2020; they were selected purposively with certain criteria, as presented in Table 1. Data were collected using quantitative content analysis. Financial statements were obtained from the IDX website and the official website of the listed companies. Data on stocks came from April 30, 2021. The dependent variable in this study is firm value proxied with Tobin's Q, the independent variable is ERM, and the mediating variable is the Board Financial Qualification (BFQ). This study also uses firm age and firm size as control variables. The formulas related to variable measures are described in Table 2.

Referring to Desender (2009), ERM disclosure can be obtained from the company's annual report. Each disclosed ERM item is given 1 point, and 0 point if it is not disclosed. Each item is totaled so that the total ERM index of each company is obtained by dividing the total score of disclosed items by the number of disclosed items. It is important to ensure coding consistency in making a valid inference from a text (Weber, 1990). Therefore, we

**Table 2.** Variable Measurement

Variable Name		Operational Definition	Proxy	References
<b>Dependent Variable</b> <i>Firm Value</i>	FV	Firm value is an economic measure reflecting the market value of a business.	Proxied with Tobin's Q = $(MVS+D) / TA$ MVS: Number of Outstanding Shares x Stock Price D: Total Liability TA: Total Asset	Arieska (2009); Hoyt & Liebenberg (2011); Silva et al. (2018)
<b>Independent Variable</b> <i>Enterprise Risk Management</i>	ERM	ERM is a framework for managing organizational risk.	Total Amount of ERM Disclosures / Score Maximum of ERM Disclosure	Desender (2009)
<b>Moderating Variable</b> <i>Board Financial Qualification</i>	BFQ	Board financial qualification is the board members' financial expertise measured by an observable indicator of educational qualification.	Number of Directors with Financial Education Background / Total Number of Directors	Darmadi, (2013)
<b>Control Variable</b> <i>a. Firm Size</i> <i>b. Firm Age</i>	FS	Firm size is company size based on market capitalization.	Total Asset	Hariyanto (2014); Darmadi (2013)
	FA	Firm age is operationalized as the total number of years of the firm's activity.	Total Annual Report – Company Year Established	

**Table 3.** Enterprise Risk Management (ERM) Items

	<b>Items</b>	<b>Explanations</b>
1.	Exercises Board Risk Oversight	The board of directors provides oversight of the strategy and carries out governance responsibilities to support management in achieving strategy and business objectives.
2.	Establishes Operating Structures	The organization establishes operating structures in the pursuit of strategy and business objectives.
3.	Defines Desired Culture	The organization defines the desired behaviors that characterize the entity's desired culture.
4.	Demonstrates Commitment to Core Values	The organization demonstrates a commitment to the entity's core values.
5.	Attracts, Develops, and Retains Capable Individuals	The organization is committed to building human capital in alignment with the strategy and business objectives.
6.	Analyzes Business Context	The organization considers potential effects of business context on risk profile.
7.	Defines Risk Appetite	The organization defines risk appetite in the context of creating, preserving, and realizing value.
8.	Evaluates Alternative Strategies	The organization evaluates alternative strategies and potential impact on risk profile.
9.	Formulates Business Objectives	The organization considers risk while establishing the business objectives at various levels that align and support strategy.
10.	Identifies Risk	The organization identifies risk that impacts the performance of strategy and business objectives.
11.	Assesses Severity of Risk	The organization assesses the severity of risk.
12.	Prioritizes Risks	The organization prioritizes risks as a basis for selecting responses to risks.
13.	Implements Risk Responses	The organization identifies and selects risk responses.
14.	Develops Portfolio View	The organization develops and evaluates a portfolio view of risk
15.	Assesses Substantial Change	The organization identifies and assesses changes that may substantially affect strategy and business objectives.
16.	Reviews Risk and Performance	The organization reviews entity performance and considers risk.
17.	Pursues Improvement in Enterprise Risk Management	The organization pursues improvement of enterprise risk management.
18.	Leverages Information Systems	The organization leverages the entity's information and technology systems to support enterprise risk management.
19.	Communicates Risk Information	The organization uses communication channels to support enterprise risk management.
20.	Reports on Risk, Culture, and Performance	The organization reports on risk, culture, and performance at multiple levels and across the entity

Sources: COSO ERM Framework (2017)

employed an independent coder who understands ERM to improve the coding reliability.

COSO (2017) mentions 20 items for ERM disclosure, which include five interrelated components and principles, including governance and culture, setting strategy and objectives, implementation, review and revision, information, communication, and reporting. The 20 items based on COSO (2017) are presented in Table 3. We used regression analysis to test the hypotheses in this study. The regression model is shown by equation 1 and 2.

$$Y = \alpha + \beta_1ERM + \beta_2C_1 + \beta_3C_2 + \varepsilon \dots\dots\dots 1$$

$$Y = \alpha + \beta_1ERM + \beta_2BFQ + \beta_3ERM*BFQ + \beta_4C_1 + \beta_5C_2 + \varepsilon \dots\dots\dots 2$$

Notes:

Y = Firm Value (FV)

$\alpha$  = Constant

$\beta_{1-5}$  = Regression coefficient

ERM = Enterprise Risk Management

BFQ = Board Financial Qualification

ERM\*BFQ = Enterprise Risk Management x Board Financial Qualification

$C_1$  = Firm size

$C_2$  = Firm age

$\varepsilon$  = Error term



**Table 4.** Descriptive Statistics Test

	N	Minimum	Maximum	Mean	Std. Deviation
FIRM_VALUE	58	0.50	5.60	1.24	0.73
ERM	58	0.60	1.00	0.87	0.10
BFQ	58	0.00	1.00	0.74	0.22
FA	58	6.00	125.00	44.00	20.08
FS	58	239,408,270,443	1,429,334,484,000,000	139,329,312,502,372	316,902,161,724,815
Valid N (list-wise)	58				

In regression analysis, it is important to ensure that the data has passed the classical assumption test. The classical assumption test in this study consists of a normality test, multicollinearity test, and heteroscedasticity test. The normality test, with One-Sample Kolmogorov-Smirnov, resulted in a significance value of <0.05, meaning that the data were not normally distributed. Thus, it was necessary to remove outliers with Z-Score, and we removed 9% outliers of the company sample. After removing the outliers, the normality test showed a significance value of 0.200, meaning that the data were normally distributed. The multicollinearity test employed the Variance Inflation Factor (VIF) for ERM, BFQ, FA, and FS, and resulted in a value of 2.405, 2.084, 1.253, and 1.559. No independent variables had a VIF score of >10, meaning no multicollinearity between the independent variables in the regression model. The heteroscedasticity test was done using the Glejser test and resulted in a significance value of 0.224, 0.250, 0.278, and 0.335 for ERM, BFQ, FA, and FS. All independent variables had a  $t > 0.05$ , meaning no heteroscedasticity.

## RESULTS AND DISCUSSIONS

Our analysis employed a final sample of 53 companies in the financial sector, consisting of 39 banking companies and 14 insurance companies. Data were described using descriptive statistics related to the data average value, maximum value, minimum value, and standard deviation, as shown in Table 4.

Table 4 confirms that the 53 companies tested through Tobin's Q score have an average value of 1.24. Tobin's  $Q > 1$  ratio describes an overvalued condition of the average stock price of banking and insurance companies in 2020. This means that the selling price of investment products is higher than the predetermined market price (Sudiyatno & Puspitasari, 2010).

The average ERM items disclosed were 0.87 or 87%. Companies that have fully disclosed all ERM items in their financial statements are Bank Mandiri, Bank CIMB, Maybank Indonesia, Bank Permata, Bank Sinarmas, and Bank Negara Indonesia. Upon further investigation, it was found that the six companies each received the Digital Awards in 2020.

The company with the least disclosure of ERM items was Bank Bisnis Internasional, with a total disclosure of only 0.60 or 60%. In its financial report, Bank Bisnis Internasional revealed that it faced the challenges of digitalization. Bank Bisnis Internasional realizes that the increasing number of technology-based financial institutions giving online loans is a sign that banks must innovate in providing services.

Table 5 presents regression analysis results. The adjusted R square of 0.148 shows that 14.8% of firm value can be explained by ERM, firm age, and firm size, while the remaining 85.2% is explained by other factors. Table 5 shows the results of hypothesis testing for ERM with a significance of  $< (\alpha) = 0.05$  with a negative value. Thus,  $H_1$  is accepted.

Model 2 shows that the adjusted  $R^2$  value is 0.252. It shows that the independent variable ERM, the modera-

**Table 5.** Result of Regression Analysis

Variables	Model 1		Model 2	
	$\beta$	p-value	$\beta$	p-value
Constant	2.256	0.008	6.085	0.006
ERM	-1.241	0.002**	-4.388	0.010**
Firm Age	0.019	0.025*	-3.103	0.043*
Firm Size	0.073	0.055	1.048	0.087
BFQ			-4.501	0.013*
ERMBFQ			2.764	0.024*
F	0.003**		0.002**	
$R^2$	0.148		0.252	

Note: \*significant at  $p < 0.05$ ; \*\*significant at  $p < 0.01$

ting variable BFQ, the interaction results of the independent variable ERM with the moderating variable BFQ, as well as the control variables of firm size and firm age are able to explain 25.2% of firm value, while the remaining 74.8% is explained by other factors. Furthermore, the hypothesis testing for ERM and BFQ shows a significance of  $< (\alpha) = 0.05$  with a positive value. Thus, it can be concluded that  $H_2$  is accepted.

### Enterprise Risk Management affects Firm Value

This study shows the influence of ERM on firm value. Effective ERM in a company is believed to give good results on performance and will affect firm value (Shin & Stulz, 2000). Companies that implement ERM will get more value from the market due to increased information disclosed in their risk profile (Hoyt & Liebenberg, 2011). Companies that implement ERM are expected to inform outsiders about their risk profile better, as a form of corporate commitment to risk management (Meulbroek, 2002).

However, Table 5 shows a negative influence of ERM disclosure on firm value. In this case, it means that the more ERM disclosures made by banking and insurance companies in 2020, the smaller their firm value. ERM disclosures require substantial costs (Suwaldiman & Fajrina, 2022), which results in reduced company revenue or profits (Eckles, et al., 2014). The decline in company profits will be responded to negatively by investors (Pfarrer, et al., 2010), which is reflected in the decrease in the value of Tobin's Q.

The purpose of ERM reporting is to increase transparency related to risks. However, it should be underlined that high ERM disclosure indicates a high level of trust from management. High ERM disclosure should indicate the higher the business risk experienced by the company; this can lead to decreasing demand for the sample of the company's shares. The results of descriptive statistical tests showed that the average ERM disclosure in the banking and insurance companies in 2020 was 0.87 or 87%, meaning that ERM disclosure by the banking and insurance companies in 2020 was high. This result contradicts Herkulanus et al. (2021). This might have happened because ERM disclosure in those companies is simply a form of obedience to OJK's regulations, so investors did not take ERM disclosure much into account as a basis for assessing the companies.

The results of this study also contradict Bohnert et al. (2018); Hoyt & Liebenberg (2011); Lechner & Gatzert (2017); Silva et al. (2018) and Soetedjo et al. (2018), stating that ERM had a positive impact on firm value. ERM has not been able to signal good news for investors in the banking and insurance companies in 2020, so this research does not support the stewardship theory, and it is more appropriate to use the signaling theory as it is used by Herkulanus et al. (2021) and Ahmad et al. (2014). Unexpected risk information disclosed by companies will give investors doubt about investing because the risk is related to losses if not mitigated properly (Herkulanus et al., 2021).

This study also showed that the company age positively influenced ERM disclosure for the banking and insurance companies in 2020. This is because long-established financing and insurance institutions, demonstrated by the company's age, represent the excellent survival of the company in its business (Herkulanus et al., 2021). The longer a company is established, the more public trust will be obtained, which means the company has a good survival (Herkulanus et al., 2021).

This study also showed that firm size had a negative influence; this means that the size of the company's assets had no effect on ERM disclosure and firm value. Companies with larger sizes generally have more diversified businesses and have easier access to the capital market. Investors consider the existing diversification to be an obstacle for companies (Septyanto & Nugraha, 2021). Company size, proxied by total assets, indicates the number of company assets deposited, and this makes investors perceive that the assets the company has are not adequately managed or tend to settle, so they are not profitable (Septyanto & Nugraha, 2021).

### Board Financial Qualification moderates the effect of ERM disclosure on Firm Value

Table 5 presents the regression results for the model that correlates with the effect of ERM on firm value. The adjusted R-square value is 14.8%. After adding BFQ as a moderating variable, the adjusted R-square value shows an increase of 25.2%. Table 5 also shows that after the addition of the moderating variable, the adjusted R-square value increased to 10.4%.

Furthermore, the addition of BFQ as a moderating variable showed an ERM  $\beta$  value of -4.388 and a BFQ  $\beta$  value of -4.501. On the other hand, the  $\beta$  value of the ERM\*BFQ interaction has a positive direction of 2.764. This shows that the addition of a moderating variable can weaken the negative effect of ERM on firm value; that is the addition of moderating variables will reduce the decline in firm value. It means, the higher the ERM and BFQ, the higher the firm value.

Based on the Moderated Regression Analysis shown in Table 5, the t-test on the interaction between ERM\*BFQ shows a significance value of  $0.005 < (\alpha) = 0.05$ . Therefore, the second hypothesis (H2), stating that Board Financial Qualification (BRQ) moderates the effect of ERM disclosure on firm value, is supported. Kleffner et al. (2003) has found that encouragement from the board of directors is one of the most important motivating factors in the application of ERM. This is because the decision to implement ERM is made by the board of directors (Lam, 2001). In its ERM framework, COSO also states that one of the factors influencing the ERM process is the board of directors. ERM, according to the COSO statement, is a mechanism influenced by the board of directors (Desender, 2009).

Good ERM disclosure reflects the excellent application of risk management in a company (Elisabeth et al., 2020). Improving corporate governance is one way to minimize risk (Sulistyaningsih & Gunawan, 2018). The application of good risk management is supported by the role of the board of directors as an agent of the company. This supports the stewardship theory, stating that the company's agents will fulfill the interests of shareholders as well as possible because agents assume that the interests of shareholders are also the interests of agents (Keay, 2017).

The application of ERM aims to prove that the company's board of directors is trying to protect firm value for the interests of its principals. Therefore, to implement good risk management, a board of directors must have a complete understanding of risks—such understanding may come from their educational background. This study is in line with Tseng & Jian (2016), showing that the disclosure of the educational background of its board of directors can be an added value for the company. This study also supports Sithipolvanichgul (2021), confirming that directors with financial education qualifications are considered to have more knowledge related to risk management, which is expected to strengthen the effect of ERM application on firm value.

## CONCLUSIONS

Based on the test results and analysis in this study, it can be concluded that ERM disclosure has not been able to positively influence the firm value of the banking and insurance companies listed on the IDX in 2020. This is because risk management disclosure in those banking and insurance companies is merely a form of obedience to the obligation regulated by OJK in its regulations, so investors did not take ERM disclosure much into account as a basis for assessing the companies.

However, we found that corporate agents tried to protect the interests of stakeholders, as seen from the role of the board of directors in this study. We discovered that BFQ, proxied by the educational background of the board of directors, was able to strengthen the negative effect of ERM on firm value. In other words, BFQ is able to moderate the effect of ERM on firm value.

We understand that our study has limitations in a way that our study does not provide different scores for ERM disclosure, although there were differences in the types of activities the companies disclosed. We gave a score of 1 for companies that only applied one or more activities disclosed per item; we suggest that further studies will consider giving different scores to different types and numbers of activities. In addition, this study also only used the COSO framework for the analysis, assuming that all samples used the same framework. Thus, we recommend that future researchers use more general, standardized ERM disclosure methods, such as the international standard for risk management guidance ISO 31000. ISO 31000 has been acknowledged and adopted as risk management in almost 70 countries—it proves that ISO 31000 has withstood the appropriateness of standard tests by various countries (Susilo & Riwu, 2018).

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