(RESEARCH ARTICLE)

The role of enterprise risk management on company value is moderated by company size in coal mining entities listed on the Indonesia stock exchange

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Abstract

This study seeks to explore and emphasize the impact of Enterprise Risk Management (ERM) on firm value, using Tobin's Q, Price to Book Value (PBV), and Price to Earnings Ratio (PER) as measurement indicators. Additionally, it will analyze how factors such as firm size, Current Ratio (CR), Debt to Assets Ratio (DAR), Total Assets Turnover (TATO), and Return on Assets (ROA) affect these relationships. The research will focus on coal mining companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2021. The study used multiple linear regression with the ordinary least squares method to analyze the data. Hypothesis testing was performed using the t-test to evaluate the significance of the regression coefficients, with a significance level set at 5 percent. The results show that Enterprise Risk Management (ERM), Debt to Assets Ratio (DAR), and Return on Assets (ROA) significantly positively influence business value. Conversely, Current Ratio (CR), Total Assets Turnover (TATO), and firm size (SIZE) have a significant negative effect on company value. Furthermore, the study found that firm size affects the relationship between Enterprise Risk Management (ERM) and Tobin's Q. Additionally, the results suggest that as ERM, CR, DAR, TATO, ROA, and firm size increase, the company value also rises.

Keywords: ERM; Firm value; Firm size; CR; DAR; TATO; ROA

1. Introduction

Companies encounter unpredictable circumstances that can impact their ability to achieve their objectives, potentially leading to either success or failure. The swift advancement of the exterior and internal environment gives rise to progressively intricate business hazards (Widjaya & Sugiarti, 2013). Companies must develop management tools capable of effectively mitigating risks in response to the current circumstances (Widjaya & Sugiarti, 2013). Effective risk treatment not only enhances commercial predictability but also boosts competitive edge and business valuation.

Effective hazard control is an essential piece of organizational strategy. The enforcement is carried out with the aim of proactively mitigating and reducing risks to the lowest feasible extent, hence assuring the company's survival in a competitive context. Adopting integrated risk management methodologies, such as enterprise risk management (ERM), can lead to improvements in the execution of risk management. ERM is a strategic methodology employed by businesses to detect and efficiently manage possible risks, with the aim of increasing the overall value of the enterprise (Hoyt & Liebenberg, 2011). One of the purpose of ERM is to establish value for the company. Efficiently mitigating manageable business risks will optimize the capacity of the firm to attain its vision, purpose, and objectives.

The coal mining sub-sector in Indonesia and globally is seeing a resurgence and is increasingly returning to its pre-pandemic state. Each organization possesses distinct objectives, encompassing both immediate and future aspirations. The company can utilize its assets in the coming years to increase its income. The main goal is to boost the company's value and benefit its owners or investors by raising share prices. A company's valuation depends on the value of its

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assets. Corporate value is significant because it reflects the company's achievements, influencing how financial supporters view it. As noted by Andianto (1996), investor prosperity grows with an increase in company value. Based on this perspective, the author concludes that as firm value rises, investors experience greater prosperity, and similarly, as the value of the company increases, so does its stock value.

The firm's valuation can be ascertained by the present market value of its shares in stock trading. Company owners aspire to have a high company value since it directly correlates with increased investor growth. In order to enhance the reputation of their organization, donors typically delegate their management responsibilities to professionals (Himatul Ulya, 2014). Regarding stock prices in the coal sub-sector, there are variations in the market of capital, which is an intriguing occurrence to analyze in relation to the company's value swings. The registered closing stock prices graph as of 31 December 2016-2021 on the IDX is displayed in Table 1.1 below:
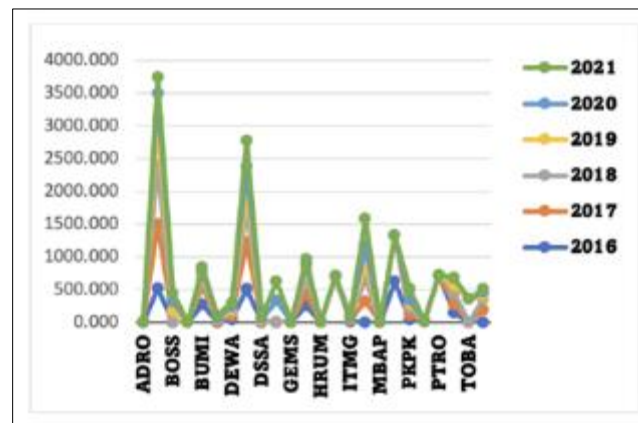
Source: www.idx.co.id 2022

Figure 1 Closing stock price for 2016 - 2021 on IDX

The graph displayed in Figure 1 illustrates the volatility of stock prices for prominent coal mining companies. These values fluctuate and generally exhibit a decreasing trajectory from 2018 to 2021. It also illustrates that various business languages can influence the company's internal factors. So, more efficient control of company risk management is required. The share price serves as a metric for evaluating the overall worth of a certain organization. Prior studies investigating the correlation between ERM and business value have produced ambiguous results. The studies conducted by Hoyt & Liebenberg (2011) and Tahir & Razali (2011) analyze the influence of ERM on the valuation of organizations. Hoyt & Liebenberg (2011) argue a meaningful positive effect, but Tahir & Razali (2011) argue because there is no discernible beneficial impact on corporate value resulting from ERM. Both study findings indicate a deficiency in research from an ERM standpoint across different firms.

According to Siahaan (2009), a company's risk management strategy aims to continuously enhance the value of each organizational effort. By implementing an ERM consolidation strategy, a company can boost its business value through various avenues. At first, companies can gain a thorough comprehension of their risk portfolio by assessing all possible dangers. Moreover, companies can employ ERM to efficiently assess risk elements by to their risk tolerance (Lin *et al,* 2012). Moreover, the adoption of ERM empowers corporations to make well-informed decisions regarding the requisite measures for carrying out company operations that entail measurable risks (Widjaya & Sugiarti, 2013; Iswajuni *et al.,* 2018). Hence, it is imperative for firms to gather a holistic risk management strategy in order to enhance their readiness in mitigating potential hazards. The study aims to reevaluate the influence of ERM on the firm value, while considering the inconsistencies observed in previous research results. The research was arranged on companies operating in the coal mining sub-sector that were publicly listed on the IDX from 2018 to 2021. The coal mining enterprises were chosen based on their significant magnitude, capacity, and business hazards, which set them apart from other industries.

2. Material and methods

2.1. Agency theory

The agency intercourse as the interaction between the primary, who is the owner of the organization, and the agent, who is given the responsibility to make decisions on behalf of the principal (Jensen & Meckling, 1976). In an agency relationship, conflicts of interest may emerge between the principal and the agent. Shareholders, acting as principals, typically aim for higher corporate profitability and dividends, while managers acting as agents, must balance fulfilling both economic and psychological needs. Management is incentivized to engage in earnings management when

delivering financial reports, in accordance with the agency-principal relationship. Therefore, one effective approach is to closely observe and oversee contractual matters pertaining to the relationship between management and investors. The theory of agency can result in "managerial misconduct" due to divergent goals between principals and agents (Dalton, 2007). The behavior of each party driven by their respective interests is correlated with this behavior. This conflict of interest illustrates an agency dilemma, leading to a situation characterized by an asymmetry of information between investors and management.

2.2. Stakeholder theory

According to Freeman (1984), the primary objective of a firm is to fulfill the requirements of stakeholders, specifically those individuals who are impacted by the organization's decisions. According to Gray et al. (1995), the longevity of a firm relies on obtaining support from its stakeholders. Therefore, the corporation must actively seek this support. Companies are more inclined to adjust when they are faced with powerful stakeholders. The study stakeholder theory is crucial because it recognizes the significant connection between persons and groups. The considerable interest lies in the business and those affected by the company's actions. This theory includes elements like the responsibility of management toward stakeholders and the organization's financial success.

2.3. Financial performance

Financial performance, as defined by IAI (2007), refers to a corporation capacity to effectively carryout and exercise control over its owned fountain. Financial achievement can be assessed by examining financial data and utilizing financial ratios. Harahap (2008, p. 303) divides financial comparison into four categories: liquidity ratios (like the Current Ratio/CR), profitability ratios (like ROA), solvency ratios (like DAR), and activity ratios (like TATO). The outcome of achievement measurements serve as the foundation for firm management or managers to enhance performance in subsequent periods. They serve as the foundation for implementing rewards and penalties.

2.4. Enterprise Risk Management (ERM)

Organizations are unavoidably susceptible to risk. Risk arises from unforeseeable occurrences. Hanafi (2009) classifies risk into two basic categories: pure and speculative. A corporation must have a risk management tool in order to efficiently handle the various threats it encounters. Risk management is around understanding hazards and applying appropriate strategies to mitigate them. An empirical study arranged by Iswajuni *et al.* (2018) has shown that ERM significantly and positively impacts a company's value. The research conducted by Hoyt & Liebenberg (2011) in the USA and Bertinetti *et al.* (2013) in Europe shows a robust and significant connection between ERM and business value. ERM has a beneficial and significant impact on the value of a company. However, there are differing perspectives that deviate from the conclusions of prior study conducted by Mohd *et al.* (2011) in Malaysia and Li *et al.* (2014) in China. Previous empirical research suggests that the ERM is an effective strategy that can greatly impact the company worth.

In implementing risk management to achieve integrated risk management, implementing the ERM model is one way to improve management quality. ERM, based on a comprehensive perspective, involves the process of identifying and assessing of various risks, the incorporation of all forms of hazards, and the synchronization of risk management efforts across all operational divisions. In contrast to traditional approach, which involves individual assessment of specific risks by each business unit and subsequent decision-making on how to address them (Lin *et al.,* 2012). ERM, as defined by COSO, is a comprehensive process that involves management, the board of directors, and another attendant. It is aimed at formulating deception and encompasses the entire organization. The purpose of ERM is to recognize prospect events that may impact the organization, effectively manage risks, and ensure sufficient confidence in achieving organizational goals (Moeller, 2015). Corporate risk management seeks to continuously enhance the value generated by all activities inside a firm (Siahaan, 2009). An ERM consolidation method has the potential to enhance corporate value through various means. Initially, firms can acquire a comprehensive understanding of their risk portfolio by evaluating all potential hazards. Furthermore, by employing ERM, firms have the ability to rank risk factors based on their risk tolerance (Li et al., 2014, Lin *et al.,* 2012). Furthermore, the adoption of ERM enables firms to make informed decisions regarding the necessary actions to undertake commercial operations with quantifiable risks (Widjaya & Sugiarti, 2013). Hence, it is imperative for enterprise to apply integrated risk management practices in order to enhance their preparedness in dealing with hazards.

2.5. Company value

The valuation of a privately owned company is the amount that prospective buyers are ready to offer in the event of a sale (Husnan, 2014:5). Tobin's Q is a reliable method for assessing a company. Conversely, in the context of public corporations, their worth is contingent upon the share value they possess in the market of capital.

2.6. The impact of ERM on company value

The research conducted by Iswajuni et al. (2018) empirically perform that ERM significantly increases a corporation's value. Similarly, studies by Hoyt & Liebenberg (2011) in the USA and Bertinetti et al. (2013) in Europe indicate that ERM consistently has a significant with positive impact on corporate value. However, there are differing perspectives from the conclusions of previous research established by Mohd *et al.* (2011) in Malaysia and Li *et al.* (2014) in China. Empirical research has demonstrated that implementing ERM is a strategic approach that significantly impacts company value. ERM strengthens risk management effectiveness and achieves unified risk management. By implementing a comprehensive strategy, ERM recognizes and evaluates different risks, covers all types of hazards, and organizes risk management efforts across all business divisions. This approach contrasts with the traditional method, where individual divisions assess specific risks separately and make independent decisions on the appropriate actions (Li et al., 2014). ERM, a concept developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and further detailed by Moeller (2015), is a comprehensive management process involving the executive committee and others. It aims to formulate strategies and mitigate potential risks that could affect the entire organization. ERM seeks to detect possible events that may impact the organization, handle risks effectively, and guarantee the attainment of corporate objectives with a satisfactory level of certainty.

Corporate risk management seeks to continuously enhance the value generated by all activities inside a firm (Siahaan, 2009). An ERM consolidation method has the potential to enhance corporate value through various means. Initially, firms can acquire a comprehensive understanding of their risk portfolio by evaluating all potential hazards. Furthermore, firms can utilize ERM to effectively rank risk factors based on their risk tolerance, as prompted by Li et al. (2014). In addition, the use of ERM enables firms to make informed decisions regarding the necessary actions to conduct commercial operations with quantifiable risks (Widjaya & Sugiarti, 2013). Consequently, firms require a thorough risk management system in order to enhance their readiness in dealing with potential threats.

2.7. The impact of current ratio (CR) on company value

Wardana & Widyarti (2015) suggest that a corporation with a low current ratio (CR) may lack sufficient current assets to cover its short-term obligations. However, it's essential to recognize that a high CR doesn't necessarily indicate a risk of bankruptcy. High credit risk can arise from poor cash and inventory management. Therefore, to accurately assess a company's liquidity, it's crucial to use a standardized ratio commonly applied to similar business sectors. Despite this, a study by Husna & Satria (2019) found that the CR does not impact company value.

2.8. The impact of debt to assets ratio (DAR) on company value

Siahaan et al. (2016) define the debt-to-assets ratio (DAR) as the ratio of a company's total debt relative to its assets. A lower debt ratio indicates reduced reliance on debt for financing, while an increase in the ratio signifies greater use of debt. Rifudin's (2019) study found that the DAR has a positive and substantial impact on the share stock prices of food and beverage companies traded on the IDX. However, study conducted by Husna and Satria (2019) showed that the DAR did not impact the valuation of industrial corporations listed on the IDX from 2013 to 2016.

2.9. The impact of total assets turnover (TATO) on company value

The study organized by Hasangapon *et al.* (2021) reveals that the total assets turnover significantly and positively influences the company's worth. The firm's assets will be assessed in relation to its overall asset turnover capacity. TATO will assess the efficacy of a company's asset management in creating revenue or profit. TATO, an abbreviation for total asset turnover, is a financial measure that assesses the efficiency of a company by comparing its net sales to its total assets. It is frequently employed to assess a company's operational efficiency. The specified ratio can be utilized to assess the capacity of a firm's assets to increase its overall net sales (Widodo, 2019). When assessing a company, potential investors will examine its TATO value. An organization can enhance the efficiency of its resource usage when the Total Asset Turnover (TATO) value intensity.

2.10. The impact of return on assets (ROA) on company value

A study established by Murhadi (2008), Sujoko & Soebiantoro (2007) discovered a notable and favorable correlation between a company's profitability (ROA) and its value. Enhanced corporate profitability at a high level improves the firm's financial performance, hence positively impacting investors' assessment of the company's future prospects. Investors often see a strong profitability as an important factor when deciding where to put their money. An affirmative reaction from investors will augment the appeal for shares, so leading to an escalation in the company's worth.

2.11. The effect of company size on firm value

The magnitude of a corporation can influence its financial performance. The number of employees also determines the company's size. The financial achievement of the company may be influenced by the expansion of its markets (Durand & Coeurderoy, 2001). The research findings align with the research carried out by Nuraina (2012), Sujoko & Soebiantoro (2007), which ascertained that the magnitude of a corporation has a significant and advantageous influence on its worth. According to Mutmainah (2015), Rajgopal & Venkatachalam (2011), Nurainy *et al.* (2013), firms with large amounts of total assets have many different choices for how to use those assets, based on several research studies. Increasing the company's ability to oversee its operations will lead to a higher valuation of the company. The size of the company has a substantial impact on its value. The research indicates a clear correlation between the size of a company and its capacity to enhance its value. The rationale behind this is that when the magnitude of a firm expands, it has greater capacity to exert control over market conditions and confront economic competition. The size of a firm strongly affects its ability to decrease ambiguity and instill confidence in investors and third parties. Large firms possess a greater level of adaptability and convenience in obtaining funds from the capital market in comparison to smaller businesses. Investors view this convenience as a positive indication because of the company's estimated high potential (Gusaptono, 2010). Hence, investors would see the company's size as significant data in their investment assessments, perhaps resulting in a value increase.

2.12. The impact of company size interaction between ERM with company value

An investigation carried out by Aggreni *et al.* (2021) found that the magnitude of a corporation does not have an impact on the correlation between ERM and the value of the organization in the financing and insurance sectors. This case also illustrates that the company's significant magnitude will allure investors who are keen on investing their funds in company stocks. Moreover, this necessitates that firms reveal ERM to principals or shareholders in order to meet their obligation to investors, flaunt the company's capacity to efficiently handle its money, and reduce risks. The firm size has little impact on the apocalypse of its ERM or its influence on the business value. However, these results can change greatly for various types of organizations.

2.13. Study framework and hypothesis

Based on adequate theoretical and empirical support for this study, the following conceptual framework can be created:
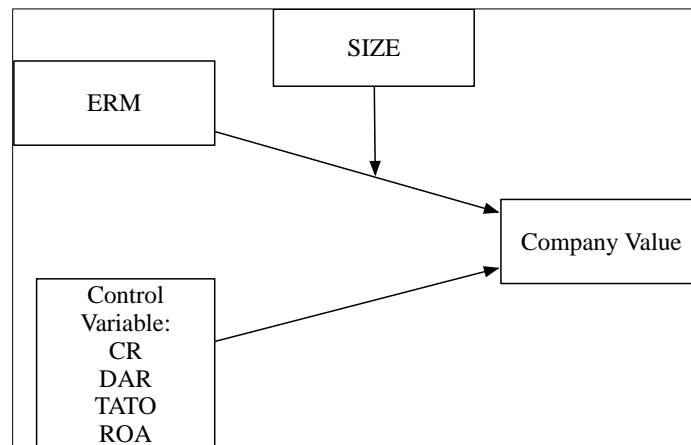

Figure 2 The conceptual framework

Using the above conceptual framework as a basis, we can propose the following hypothesis:
H1. ERM has a positive and significant impact on company value
H2. CR has a positive and significant impact on company value
H3. DAR has a positive and significant impact on company value
H4. TATO has a positive and significant impact on company value
H5. ROA has a positive and significant impact on company value
H6. Company size has a positive and significant impact on company value
H7. Company size moderates the relationship between ERM and company value

2.14. Design of the research

2.14.1. Research methods

The study employed a statistical methodology with a primary focus on hypothesis testing. The study relies on varied measurements based on hypotheses and beliefs.

2.14.2. Research variable

Tobin's Q, PBV, and PER as the dependent variables in this research, while the independent variables are CR, DAR, and TATO. This research also uses the moderating variable SIZE.

2.14.3. Operational Definition of Variables

1) ERM or Enterprise Risk Management is a information included in a company's annual report. This disclosure can be identified by looking for specific terms like "ERM," "Chief Risk Officer," "Risk Management Committee," "Risk Committee," "Strategic Risk Management," "Consolidated Risk Management," "Holistic Risk Management," and "Integrated Risk Management." ERM is assessed using a binary variable, where a value of 1 indicates that the organization has implemented ERM, and a value of 0 indicates that it has not.
2) CR is an indicator that assesses the connection between current assets and current liabilities. It is determined by dividing the total current assets by the total current liabilities.
3) DAR, or Debt Asset Ratio, is a financial metric that compares the total liabilities to the entire assets. The calculation involves dividing the aggregate debt by the aggregate assets.
4) TATO, or total assets turnover, measures the ratio of net sales to total assets. It is computed by dividing net sales by total assets..
5) ROA, or Return on Assets, is calculated by dividing net profit before tax by total assets. This ratio measures how efficiently a company utilizes its assets to generate pre-tax profit..
6) SIZE: In this study, "size" refers to the scale of the company, determined by the value of its assets. This is usually measured using the natural logarithm of the total assets (Ln(Total Assets)).
7) Tobin's Q is a measure used to evaluate the value of a firm based on its market price. It indicates the amount of value that potential purchasers or investors would be willing to pay. This study utilizes the Tobin's Q ratio, which is computed using the subsequent equation:

$$Q = \frac{(\sum \text{Outstanding shares x Clossing price}) + \text{Total liabilities}}{\text{Total assets}}$$

2.14.4. Data Types and Sources

The research uses quantitative data, including ratio and nominal (dummy) statistics. It draws from audited financial statements and annual reports of coal mining companies listed on the IDX from 2018 to 2021. The financial and annual reports were sourced from the IDX website, www.idx.com, and Yahoo Finance.

2.14.5. Data Collection Procedures

The research methodology involved systematically collecting relevant data from the financial reports and annual reports of the company and Yahoo Finance. Following this, each variable was calculated, and the data was analyzed. This process includes systematically recording, gathering, selecting, and organizing data to conduct quantitative analysis, ultimately producing valuable processed data.

2.14.6. Population and Sample

The population data consists of coal mining companies listed on the Indonesia Stock Exchange (IDX) between 2010 and 2013. The study used a purposive sampling method, with the following criteria for selecting samples:

1) Inclusion of coal mining subsector companies listed on the IDX between 2018 and 2021.
2) Inclusion of companies that were continuously listed on the IDX throughout the entire research period.
3) Inclusion of companies that released comprehensive financial and annual reports from 2018 to 2021.
4) Utilization of the Indonesian rupiah as the currency unit for financial reporting.

2.14.7. Analysis Techniques

The study utilized multiple regression models with Moderated Regression Analysis (MRA) using the Andre Hayes split model and IBM SPSS Statistics 25 to test and validate the model's feasibility and hypotheses. The equations presented in this study are:

$$\hat{Y} = \alpha + \beta_1 ERM + \beta_2 CR + \beta_3 DAR + \beta_4 TATO + \beta_5 ROA + \beta_6 SIZE + \beta_7 SIZE*ERM + e$$

Explanation: $\hat{Y}$ = Company value is assessed using Tobin's Q, Price to Book Value (PBV), and Price to Earnings Ratio (PER); SIZE*ERM = The effect of company size on the relationship between ERM and firm value; α = Constant; β1-7 = Coefficient for each explanatory variable; ERM = Enterprise risk management is measured using a dummy variable: 1 for companies implementing ERM and 0 for those that do not; CR = Current Assetsl; DAR = Debt to Asset Ratio; TATO = Total Assets Turnover; ROA = Return on Assets; SIZE = Company size measured from book value assets; € = Error. The stages in analyzing multiple regression techniques include descriptive statistics, testing classical assumptions, assessing normality, checking for autocorrelation, and examining multicollinearity, and heteroscedasticity testing. In this research hypothesis testing uses the t-test with a 5% (α = 0.05) significance level or with 1 95% confidence level..

3. Results

3.1. Description of research subjects and objects

This research investigates the effect of ERM on the market value of publicly traded coal mining companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2021. Information about these companies can be accessed on the website www.idx.co.id. Based on the research criteria, there are 80 firm samples in total. The data underwent a normality analysis, and out of the 80 observations, only 64 were included in the normality testing. The remaining 16 data points were excluded from the analysis as they were deemed outliers.

3.2. Descriptive Statistical Analysis

The objective of the descriptive statistical analysis in this research is to offer a comprehensive overview of the variables used, such as ERM, SIZE, CR, DAR, TATO, ROA, Tobin's Q, PBV, and PER. Table 1 presents the lowest, highest, and average values for each sample from 2018 to 2021, as indicated by the research findings.

3.2.1. Enterprise Risk Management (ERM)

ERM is quantified using binary variables. A value of one is assigned to companies that have implemented ERM, while a value of zero is assigned to companies that have not implemented ERM. The report indicates that from 2018 to 2021, 22 enterprises, accounting for 34.38 percent, adopted ERM. However, 42 out of the total number of enterprises, which accounts for 65.62%, did not effectively adopt ERM.

3.2.2. Liquidity

CR is used as a proxy to measure the liquidity of a company. The descriptive statistical analysis reveals that PT. Perdana Karya Perkasa Tbk achieved the maximum value of 14,613.02 in 2019, while PT. Petrosea Tbk recorded the lowest value of 15.08 within the same year. The average CR value achieved was 630.2248, indicating the company's capacity to cover current liabilities with current assets at a rate of 630 percent or with a ratio of 6.3 times the assets per current liability.

3.2.3. Solvency

Table 1 Descriptive statistics test result

Variable	n	Minimun	Maximum	Mean	SD
Tobin's Q	64	0.08	233.44	7.0491	34.23284
PBV	64	-0.40	2,985.23	70.4864	409.51370
PER	64	-3459.82	140.58	-46.3664	433.86598
ERM	64	0.00	1.00	0.3438	0.47871
CR	64	15.08	14613.02	630.2248	2252.87839
DAR	64	0.09	6.56	0.5492	0.79976
TATO	64	0.00	8.38	0.9691	1.08995
ROA	64	-15.20	66.88	13.1327	18.07716
Size	64	22.35	31.73	29.1652	1.87115

DAR is used as a measure of a company's solvency. The findings of the descriptive statistical analysis indicate that PT. Petrosesa Tbk reached the maximum value of 6.56 in 2018, while PT. Harum Energy Tbk attained the lowest value of 0.09 in 2020. In this context, the average DAR value is 0.55, indicating that each liability is backed by 0.55 assets.

3.2.4. Activity

The Total Assets Turnover (TATO) ratio represents the company's degree of activity in this case. The descriptive statistical analysis results show that PT Petrosea produced the highest score of 8.38. Petrosea Tbk in 2018, while PT produced the lowest value of 0.00. Bumi Resources Minerals Tbk in 2018 with average TATO value reached 0.97. These results also show that, in general, the company's net sales value per year is still below the average total assets.

3.2.5. Profitability

ROA is used as a measure to represent the profitability of a company. According to the findings of the descriptive statistical analysis, PT achieved the highest score of 66.88. PT acquired Bayan Indonesia Tbk at a minimum value of -15.20, and Borneo Olah Sarana Sukses Tbk in 2020. The company's average ROA was 13.13%, indicating that its profit-generating capabilities amounted to 13.13% of its total assets.

3.2.6. Firm Size

The highest score was 31.73 by PT. Bumi Resources Tbk in 2021, and the lowest score was 22.35 by PT Atlas Resources Tbk in 2020. The average company size in the sample is 29.1652.

3.2.7. Firm Value

In this study, the company's value is evaluated using Tobin's Q, PBV, and PER. According to the descriptive statistical analysis conducted from 2018 to 2021, the highest value of Tobin's Q Index was 233.44 for PT. Atlas Resource Tbk in 2020, while the lowest value was 0.08 for PT. Bumi Resources Tbk in 2021. Moreover, PT achieved the highest PBV (Price to Book Value) of 2,985.23 in 2020, while the lowest PBV value of -0.40 was recorded by PT. Petrosea Tbk in 2018. Subsequently, PT attained the highest PER value of 140.58. Afa Energi Investama reached its highest value in 2020, with the lowest value recorded at -3,459.82 in 2018. When Tobin's Q, PBV, and PER values exceed 1, it indicates that the company is experiencing growth in its market share value.

3.3. Regression Model Analysis

In this context, regression analysis is employed to assess the impact of independent variables' effect on the dependent variable. This study employs linear regression analysis to evaluate how ERM, CR, DAR, TATO, ROA, and SIZE affect company valuation, as measured by Tobin's Q, PBV, and PER. The regression equations are developed based on the results of the three regression models shown in Table 2:

Model 1

$$\text{Tobin's Q} = 226.550 + 378.428\ ERM_{it} - 0.004\ CR_{it} + 20.285\ DAR_{it} - 19.963\ TATO_{it} + 0.359\ ROA_{it} - 0.7445\ SIZE_{it} - 12.527\ SIZE{*}ERM_{it} + \varepsilon$$

Model 2

$$PBV = 2307.628 + 4642.326\ ERM_{it} - 0.039\ CR_{it} + 242.539\ DAR_{it} - 236.323\ TATO_{it} + 3.973\ ROA_{it} - 75.723\ SIZE_{it} - 153.915\ SIZE{*}ERM_{it} + \varepsilon$$

Model 3

$$PER = -4564.983 + 4556.152\ ERM_{it} + 0.057\ CR_{it} - 11.839\ DAR_{it} + 56.686\ TATO_{it} - 0.605\ ROA_{it} + 151.283\ SIZE_{it} - 151.928\ SIZE{*}ERM_{it} + \varepsilon$$

A positive coefficient signifies that the independent and dependent variables exhibit a simultaneous shift in the same direction. Conversely, a negative coefficient signifies that the independent variables shift in the other way. The regression coefficient value interpretation is based on the results of the best regression coefficient from model 1:

3.3.1. Constant

The results show that if ERM, CR, DAR, TATO, ROA, SIZE, and SIZE*ERM are zero, the company value is 226,550.

3.3.2. Enterprise Risk Management (ERM)

The coefficient of 226,550 for the ERM variable indicates that a one-unit increase in ERM will lead to a corresponding increase in the company's value by 226,550, and vice versa. A positive regression coefficient indicates a direct relationship.

3.3.3. Current Ratio (CR)

The CR coefficient is -0.004. This negative value means that a one-unit increase in CR will result in a decrease in the company's value by -0.004, and vice versa.

3.3.4. Debt to Assets Ratio (DAR)

The DAR coefficient is 20,285, which means that a one-unit increase in DAR will result in a 20,285 increase in the company's value. A positive regression coefficient suggests a direct relationship..

3.3.5. Total Assets Turnover (TATO)

The TATO coefficient is -19,963, which means that a one-unit increase in TATO will lead to a decrease in the company's value by -19,963, and vice versa.

3.3.6. Return on Assets (ROA)

The ROA coefficient is 0.359, which means that a one-unit increase in ROA will result in a 0.359 increase in the company's value. A positive regression coefficient denotes a direct relationship.

3.3.7. Firm Size (SIZE)

The SIZE coefficient is -0.7445. This negative value indicates that a one-unit increase in SIZE will lead to a decrease in the company's value by -0.7445, and vice versa.

Moderation of Firm Size (SIZE) on the Relationship Between ERM and Company Value (Tobin's Q): The moderating variable SIZE*ERM has a coefficient of -12,527. This negative value indicates that a one-unit increase in SIZE*ERM will result in a decrease in the company's value by -12,527, and vice versa.

Table 2 Coefficient regression values

Model	Unstandardized Coefficients		Standardized Coefficients		
	β	SE	β	t	Sig.
Model 1					
(Constant)	226.550	78.242		2.895	0.005
ERM	378.428	85.254	5.292	4.429	0.000
CR	-0.004	0.001	-0.242	-3.010	0.004
DAR	20.285	4.530	0.474	4.478	0.000
TATO	-19.963	4.618	-0.636	-4.323	0.000
ROA	0.359	0.165	0.190	2.178	0.034
SIZE	-7.445	2.643	-0.407	-2.817	0.007
ERM*SIZE	-12.527	2.882	-5.179	-4.347	0.000
Dependent Variable: Tobin's Q					
Model 2					
(Constant)	2307.628	1093.367		2.111	0.039
ERM	4642.326	1191.359	5.427	3.897	0.000
CR	-0.039	0.017	-0.216	-2.308	0.025
DAR	242.539	63.305	0.474	3.831	0.000

TATO	-236.323	64.537	-0.629	-3.662	0.001
ROA	3.973	2.306	0.175	1.723	0.090
SIZE	-75.723	36.928	-0.346	-2.051	0.045
ERM*SIZE	-153.915	40.273	-5.320	-3.822	0.000
Dependent Variable: PBV					
Model 3					
(Constant)	-4564.983	2416.564		1.889	0.064
ERM	4556.152	2633.147	5.027	1.730	0.089
CR	0.057	0.038	0.295	1.506	0.138
DAR	-11.839	139.917	-0.022	-0.085	0.933
TATO	56.686	142.639	-0.142	0.397	0.693
ROA	-0.605	5.096	-0.025	-0.119	0.906
SIZE	151.283	81.618	0.652	1.854	0.069
ERM*SIZE	-151.928	89.011	-4.956	-1.707	0.093
Dependent Variable: PER					

Table 3 illustrates that the regression model with the highest performance is model 1, which uses Tobin's Q, PBV, and PER as measures of company value. This model provides the best regression coefficient and can be utilized as a basis for further analysis in this study.

3.3.8. Correlation and Determination Coefficient

The outcomes of regression testing can be indicated by the coefficient of correlation and coefficient of determination:

Table 3 Coefficient correlation and determination

Model	R	R^2	Adjustment R^2	Std. Error of the Estimate
1	0.921	0.848	0.829	14.16455
Notes: [a]Predictors: (Constant), ERM, CR, DAR, TATO, ROA, SIZE, ERM*SIZE, [b]Dependent Variable: Tobin's Q				

In Table 3 above, shows the level of Interrelationship among the independent variables, in this case, ERM, CR, DAR, TATO, ROA, SIZE, ERM*SIZE with Tobin's Q, is 0.921 or reaches 92.10 percent, which means it is classified as very strong. On the other hand, the level of influence between the exogenous and endogenous variables has a coefficient of determination of 0.848 or 84.80 percent of the influence. In comparison, other independent factors outside the control of this study influence the remaining 0.152 or 15.20 percent.

3.4. Hypothesis test

The traditional assumption tests revealed that the data followed a normal distribution and showed no evidence of autocorrelation, multicollinearity, or heteroscedasticity. Following this, hypothesis testing was conducted to assess how the independent variables affect the dependent variable, with the findings of the t-value tests provided.

Table 4 T test results

Unstandardized Coefficients			Standardized Coefficients		
Model	β	SE	β	t	Sig.
(Constant)	226.550	78.242		2.895	0.005
ERM	378.428	85.254	5.292	4.429	0.000
CR	-0.004	0.001	-0.242	-3.010	0.004
DAR	20.285	4.530	0.474	4.478	0.000
TATO	-19.963	4.618	-0.636	-4.323	0.000
ROA	0.359	0.165	0.190	2.178	0.034
SIZE	-7.445	2.643	-0.407	-2.817	0.007
ERM*SIZE	-12.527	2.882	-5.179	-4.347	0.000
Notes: [a]Dependent Variable: Tobin's Q. *Signifcant at 5 percent					

According to Table 4, the impact of the independent factors may be elucidated as follows:

1) The ERM variable for the company has a value of 4.429, which is highly statistically significant with a p-value of 0.000. Given that this p-value is below 5 percent, it indicates that ERM has a statistically important and favorable direct impact on company value.
2) The company's CR control variable has a value of -3.010, which is statistically significant with a p-value of 0.004. Since this p-value is below 5 percent, it suggests that CR has a direct, negative, and statistically significant effect on firm value.
3) The coefficient for the control variable DAR in relation to company value is 4,478, with a significance value of 0.000. This indicates that DAR has a substantial positive direct impact on firm value.
4) The coefficient of the control variable TATO regarding firm value is -4.323, signifying a strong and significant negative effect of TATO on firm value. The significance level of 0.000 reinforces this finding.
5) The control variable ROA has a coefficient of 2,178 with a significance level of 0.034. This suggests that ROA has a direct, positive, and statistically significant effect on firm value.
6) The moderating variable SIZE has a coefficient of -2.817 and a significance level of 0.007. This indicates that SIZE has a direct, significant, and substantial effect on company value.
7) The effect of SIZE as a moderator on the relationship between ERM and company value is significant, with a coefficient of -4.347 and a p-value of 0.000. This suggests that SIZE influences the association between ERM and company value.

4. Discussion

4.1. The Effect of ERM on Company Value

The findings of this research support the conclusions of earlier studies by Iswajuni et al. (2018), Hoyt & Liebenberg (2011), and Bertinetti et al. (2013). Research has shown that implementing ERM positively and significantly impacts the financial value of European organizations. Nevertheless, the findings of this study are incongruous and diverge from the findings of Mohd Tahir and Razali's (2011) study in Malaysia and Li, Q. et al.'s (2014) study in China, which both concluded that ERP had no meaningful effect on firm value in their respective nations. ERM facilitates the generation of corporate value by equipping management with the means to address and surmount all business risks arising from future uncertainties. This is achieved through the integration of various risk categories using comprehensive tools and procedures. In order to effectively mitigate and minimize many potential risks, including the risk of business collapse. Efficient execution of risk management, both by the company and through ERM, significantly influences the level of investor trust. Minimizing the danger of firm failure will be perceived positively by investors. It is crucial to examine the potential for success while making investing selections. The implementation of the company's ERM system will allow the company to effectively manage and mitigate the risk of failure both in the short term and the long term. This will instill a sense of optimism and trust in investors, encouraging them to make their investments with more confidence. This can also be a catalyst that elicits a favorable reaction from investors, which is directly linked to a rise in demand

for shares and then leads to an automatic rise in the company's value. ERM enables the establishment of a structured system within the firm's organizational framework to proactively identify and effectively handle possible risks that may pose a threat to the company, hence enhancing its overall value. Enterprise Resource Planning (ERP) installation enables management to make crucial business decisions regarding the necessary operations to be executed. High levels of accuracy are essential for effective decision-making, as any failure in accuracy can significantly diminish the company's worth. According to Hoyt and Liebenberg (2011), firms can prevent unnecessary spending on risk management by implementing integrated decision-making across all categories of business risks. Similarly, according to Pagach & Warr (2010), ERM has the potential to generate value by enabling firms to prevent financial challenges associated with expenditures and expenses. This, in turn, allows companies to effectively pursue high profitability and achieve their objective of enhancing company value. Which can be achieved with greater optimization.

4.2. The Influence of CR on Company Value

The findings of this study are consistent with Hutauruk (2024) and Wardana and Widyarti (2015), who researched Sharia Commercial Banks listed on the BEI. However, the findings diverge from those of Husna and Satria (2019), who studied manufacturing firms listed on the IDX. For banking companies, the CR is crucial for supporting operations, while in manufacturing companies, CR does not impact company value. In the coal mining sector, CR is a key factor supporting short-term operations due to significant financing needs related to mining activities. Companies often face substantial costs for land acquisition, especially in areas with coal deposits, and must address community and ancestral land disputes. Additionally, mining operations involve heavy equipment and collaborations with vendors for spare parts. Port-related expenses, such as loading and administrative costs, also require substantial investment to ensure efficient operations and meet targets.

4.3. The Affect of DAR on Company Value

The results of this study support earlier research by Siahaan et al. (2016), which defines a firm's debt ratio as the proportion of total debt relative to total assets, highlighting its significant impact on company valuation. The results also align with the work of Hutauruk (2024) and Rifudin (2019), who found that DAR positively and significantly affects the stock prices of food and beverage companies listed on the IDX. However, these findings contradict Husna and Satria's (2019) view that DAR does not influence the valuation of manufacturing firms. This study suggests that the ratio of total debt to total assets provides insight into how business debt affects asset management. In the coal mining industry, companies often rely on external loans to secure the substantial financial resources needed for working capital, including the purchase and maintenance of large machinery. The available funding directly correlates with potential growth and its impact on the company's operations and results.

4.4. The Effect of TATO on Company Value

The findings are in agreement with Hasangapon et al. (2021), which emphasizes the significant effect of TATO on company value. In this instance, however, the effect is negative, meaning that as TATO increases, the company's value declines. This observation is consistent with Widodo's (2019) research, which demonstrates that TATO, used to compare net sales with total assets, indicates operational efficiency when TATO values rise. Nevertheless, the study reveals a negative relationship between TATO and firm value, suggesting operational inefficiencies during the study period. Consequently, the TATO value averaged below one, reflecting that the company's sales capacity is less than the capacity of its current assets.

4.5. The Influence of ROA on Company Value

The findings support the research conducted by Hutauruk (2024), Murhadi (2008), and Sujoko and Soebiantoro (2007), which found a positive and significant relationship between ROA and company value. An increase in ROA reflects improved financial performance and potential for higher profits, which is encouraging for investors. This positive trend attracts investors, leading to increased investments in the company's shares, which in turn raises share prices and signals a better future value for the company.

4.6. The Impact of SIZE on Company Value

The investigation result support the research Durand & Coeurderoy (2011), which demonstrates that the expansion of the market catered to by the company has the capacity to enhance the company's financial performance. According to Hutauruk (2024), Hutauruk, Martinus Robert (2024), Nuraina and Sujoko (2012), and Soebiantoro (2007), there is a strong correlation amongst firm size and company value. The organization's preference for utilizing its assets in business increases as the size of the company grows (Mutmainah, 2015), (Rajgopal & Venkatachalan, 2011), (Nurainy et al., 2013). These variables show that company size has a significant impact on company value. An interesting finding from this study is that as the company's size increased, its value decreased. This can be attributed to the close

relationship between the coal mining industry and land licenses, as well as the presence of various coal deposits. Such interactions can lead to inconsistencies between exploration results and the actual exploitation of coal. A smaller company with substantial coal reserves and high-quality resources is likely to improve its operational efficiency and value over time.

4.7. SIZE Moderation of the Relationship Between ERM and Company Value

The findings of this study contradict those of Anggeni et al. (2021), which found that company size does not moderate the relationship between ERM and company value in the financing and insurance sectors. This discrepancy arises because the coal mining sector differs significantly from the industries studied previously. The mining industry is inherently more complex, with unique challenges related to coal deposit reserves and extensive operational activities requiring substantial resources. Thus, company size is essential in influencing the relationship between ERM and company value. Larger companies face greater risks and operational demands, while smaller companies have fewer but potentially more manageable challenges. Ultimately, the potential reserves identified during exploration will influence future exploitation and business value.

5. Conclusion

Drawing from the earlier data analysis and discussion, this study finds that the implementation of ERM in Indonesia, especially within the coal mining sector, is currently limited. However, ERM demonstrates a significant and positive effect on firm value. Tobin's Q is found to be a more appropriate measure of company valuation compared to PBV and PER. Additionally, it is likely that other organizations in the sector will adopt ERM to manage their business risks. The company size (SIZE) has a beneficial effect on company value, whereas the regulatory variables solvency (DAR) and profitability (ROA) also positively affect company value, while liquidity (CR) and activity (TATO) negatively influence it. A limitation of this study is the incomplete implementation of ERM among Indonesian firms, particularly in the non-financial sector. The Enterprise Risk Index is not used for measuring ERM due to its limited relevance. Companies with effective ERM management will be better positioned to anticipate and address future business challenges, particularly in the coal mining industry.

Compliance with ethical standards

Disclosure of Conflict of interest

The author confirms that they have no identifiable conflicts of interest, financial interests, or personal affiliations that could have influenced the research reported in this article.

Statement of ethical approval

This study does not entail the collection of information about other individuals and relies on original data obtained from meticulously designed questionnaires.

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