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FINANCIAL RISK ANALYSIS ON FINANCIAL PERFORMANCE IN *SUB SECTOR COAL MINING* COMPANIES ON INDONESIAN STOCK EXCHANGE

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ABSTRACT **DOI No: 10.36713/epra12234** **Article DOI: https://doi.org/10.36713/epra12234**

This study aims to examine financial risk, namely credit risk, liquidity risk, and operational risk on the financial performance of coal mining sub-sector companies on the Indonesia Stock Exchange in 2016-2020. The sampling technique used purposive sampling to get a total of 54 observations. This type of research is an associative quantitative study with panel data regression analysis techniques.

Based on the results of the analysis, it is found that Credit Risk, Liquidity Risk, and Operational Risk have a negative effect on Financial Performance . The lower the risk that occurs will affect the increasing value of the company. The implication of this research is that the company is expected to manage and control the risks in the companys financial activities (credit risk, liquidity risk and operational risk) optimally so that problems do not occur in order to increase the level of profitability.

KEYWORDS: ***Credit Risk, Liquidity Risk, Operational Risk, Financial Performance.***

I. INTRODUCTION

A. Background of the problem

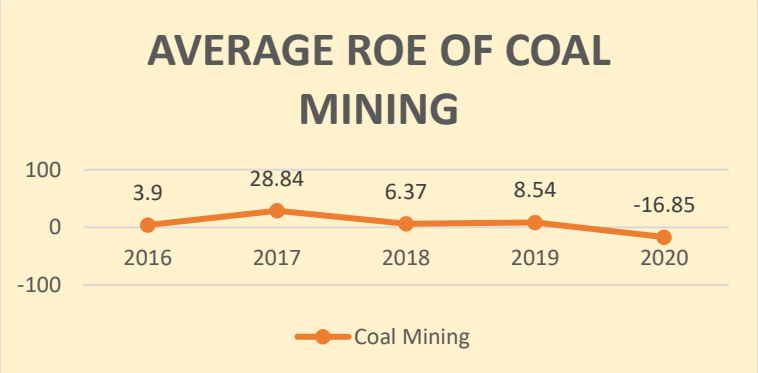
The company's financial performance is the company's achievement that is considered by investors in assessing and selecting an investment. The company's financial performance is influenced by the performance of the global economy. The global economic crisis that occurred in 2008-2009 was a financial crisis that had an impact on most companies in Indonesia . The crisis caused the erosion of investor confidence in the ability of public companies to manage risk effectively. Likewise, the current crisis due to the Covid-19 pandemic has affected the country's economy which greatly affected the company's financial performance.

According to Tjahjono, et al (2009) in the 2019 Indonesia *Economic Outlook* , the impact of the global economic crisis in Indonesia has two routes, namely trade and financial routes. The impact of the crisis through the trade route caused export performance to increase in line with the weakening of the rupiah. On the other hand, the impact of the crisis through financial channels occurred directly or indirectly. The direct impact occurs if the company has a relationship with a financial institution that has a high risk of non-performing assets. Meanwhile, the indirect impact is hampering the company's economic and financial availability. Corporate finance is reflected through the effectiveness of the company's management and one of the indicators used to measure it is profitability. Profitability is the company's ability to earn profits . Profitability can be measured by one of the ratios that compare *net income* with equity earnings. Basically measuring the success of a company in carrying out its activities is often based on the level of profit earned.

The corporate sector in Indonesia that is experiencing a very good growth trend is the mining sector . *Coal Mining* Sector still able to provide optimal results, even in a situation of economic crisis that occurred, such as the crisis in the Covid -19 pandemic which had held back the mining sector at the global level . As the domestic

economy develops , the need for coal is considered to be increasing. The *Coal Mining sector* will continue to contribute to the development and strengthening of the national economy. In 2018 mining companies recorded the achievement of non-tax state revenues of IDR 50 trillion, exceeding the 2018 non-tax state revenue target of IDR 32.1 trillion recorded by the Directorate General of Mineral and Coal and the Ministry of Energy and Mineral Resources (Hartomo, 2019).

Financial performance in the *Coal Mining sector is* shown based on the Profitability ratio as measured by *Return on Equity* (ROE) which tends to be stable during the period 2018-2020 although it experienced a decline in the 3rd quarter of 2020.



Source : www.idx.co.id

Figure 1. Graph of Average ROE of the *coal mining sector*

Based on Figure 1, that the company's performance *coal mining* in the period 2016-2020 experienced fluctuations . In 2016 the average ROE was 3.9% and increased in 2018 by 28.84%. In 2018 it decreased to 6.37%. Then in 2019, it increased by 8.54 %. Then it decreased drastically in 2020 to -16.85 % . This decrease shows that the amount of net profit received by the business owner for the capital invested in the company decreased.

The decline in ROE is influenced by a decrease in profit margins , that is, if there is an increase in company sales then the burden on the company will increase so that it affects profits. The phenomenon that will be studied regarding the decline in profitability either comes from the financial risk to profitability that is shared by *sub-sector companies coal mining* to investors.

How good or bad the company's performance has been is related to the risks taken by the company's management (Murithi, 2016). Financial risk is the possibility of the company collapsing when the company uses debt to meet financial commitments when the cash balance is insufficient. Financial risk is a significant factor that affects the company's performance.

Several studies on financial risk on financial performance have been conducted. Kamau & Njeru (2016) investigated how financial risk affects the insurance performance of companies listed on the NSE Kenya, the results of their research show that operational risk has a significant negative effect on the ROE of companies in the NSE. Murithi (2016) conducted research on financial risk and financial performance of commercial banks in Kenya. Research findings indicate that credit risk and liquidity have a significant negative effect on ROE . However, the results of research conducted by Ongsongo, et al (2020) differ from previous research, namely credit risk and operational risk do not have a significant influence on financial performance .

With the phenomena and inconsistencies in the results of previous researchers regarding financial performance, it becomes the background for researchers to study the financial risks associated with company profitability. Because financial risk is important and can affect the company's rate of return on capital, so companies must pay attention and take into account financial risks to get a high rate of return and can attract investors to invest in their company.

There is a phenomenon of decreasing profitability regarding the company's financial risk and capital structure that affects financial performance. Management in a company must be able to determine what risks can affect the company's performance. *Signal* theory is related to the way company managers find out the risks and impacts expected by company managers on the financial performance of the company . Information that is shared s as notification generate *si gn al* for investors there is an investment decision-making process (Jogiyanto, 2014) . According to Omasete (2014), shareholders assign company managers and executive boards with the role of managing risk. Risk affects organizational performance. These risks if managed properly can help achieve the goal of maximizing investment returns and corporate earnings (Collier & Agyei-Ampomah , 2006).

Research applies *signal* theory to show the use of information contained in financial statements as a *signal* for the welfare of the company in terms of financial performance. In practice, shareholders do not know all the information available to company managers that affects risky ventures taken by them on behalf of company shareholders (Pearson 2002). As a result, effects on ownership and governance, and indirect costs on firm performance that include administrative, operational, and even reputational costs appear much later when poor performance is reported at the end of the financial year (Kihooto et al. 2016). Therefore, financial risk can help companies to improve their financial performance. Based on the background of the problem and there are still inconsistencies in the results of previous studies, this study aims to test impact financial risk on financial performance in coal *mining sub-sector companies on* the Indonesia Stock Exchange in 201*6-2020* .

II. LITERATURE REVIEW AND HYPOTHESES

A. Literature Review

1. Signaling Theory

Signaling theory usually proposes that two parties can overcome the problem of asymmetric information by asking one party to send a *signal* to be conveyed to the other party (Spence 1973). Modigliani and Miller's theory was used by Brigham and Houston (2013) to reveal that investors and managers tend to have the same information about the prospects of a company. Signal theory become a theory that can encourage firm value, because this theory provides information about the condition of the company through its financial statements to reduce information discrepancies. Signals in the form of good news and bad *news* is the result of information translated by investors. If the company's reported earnings position increases, the information indicates that the company is in good condition and can be classified as a good *signal* . However, if the reported financial performance declines, then the company is in bad condition and this is considered a bad sign (Mariani, 2018).

Signals are received by financial users in the form of information about the company's performance. *Signal* theory is associated with the risk undertaken by corporate managers and the expected impact on financial performance (Auronen 2003). According to Omasete (2014), shareholders assign company managers and executive boards with the role of managing risk. Risk affects organizational performance. These risks if managed properly can help achieve the goal of maximizing investment returns and corporate earnings (Collier and Agyei-Ampomah 2006).

2. Financial performance

One of the problems in the survival of the company is a financial problem. Expert action is required when carrying out operations to prevent excess or underfunding leading to bankruptcy. To assess the development of a company, it is necessary to evaluate the company's performance every year. Harjito and Martono (2001) stated that financial performance is evaluation of the company's financial condition so that it can be information in the past, present and in the future . Financial performance is a financial activity in a certain period that is reported in the financial statements, including the income statement and balance sheet (Sutrisno, 2003). Financial management theory provides many variations of indicators to measure the performance of a company, one of which is financial ratios. Financial performance can be assessed based on the analysis of financial statements and analysis of the company's financial ratios.

According to Riyanto (1998), the ability of a company to generate profits over a certain period of time is called profitability. Shareholders or investors, creditors and managers need financial analysis to find troubled companies compared to other companies in the same industry group. Profitability ratios describe the profit earning capacity of the organization and reveal positive or negative business activities. *Return O n E quity* is an indicator that shows how far the company is in effective management of equity capital (net assets), measuring profits from investments by shareholders or shareholders (Sawir 2009:20). In this study, the proxy used is the ratio of *Return on equity* (RO E) .

3. Financial Risk

Risk is a condition faced by companies , organizations , and individuals in making investment decisions, namely profit or loss . in the accounting period. According to Hanafi (2006:1) , risk is defined as a danger, consequence or consequence that may arise as a consequence of an event . current or future activities . Financial risk is a risk related to finance, which has the potential to cause the loss of some or all of the money and assets owned. The relationship between risk and the rate of return on capital is one - way , occurs in a normal market . High rate of return on capital, lead to a high risk. The number of assets that are included in decision making causes high risks that arise .

a. Credit Risk

The risk that the company will get if it does not pay off the credit that has been given. According to the Financial Services Authority (2016), credit risk is the risk of a company's failure to pay its obligations to financial institutions that have provided credit. The Nyasaka study (2017) determined that non-performing

loans have a negative impact on bank loanability. This creates a negative signal effect on credit risk. This study adds value by shifting focus from banks and instead focuses on the non-financial sector.

The proxy used to measure this variable is the *Debt to Income Ratio* . *Debt to Income Ratio* is the ratio of total debt to total gross income . Gross income is obtained from total income before being deducted by taxes or other components. *Debt to Income Ratio* is used by lenders to see the financial capacity of the company to be given credit .

b. Liquidity Risk

Companies must have the ability to pay off their financial obligations if they want to maintain the continuity of their business activities (Harjito and Martono , 2010:55) . *Current ratio* (CR) is indicators used right ? to measure the level of liquidity of a company and reflect the company's ability to pay off its short-term financial debts on time using current assets owned by the company. The financial problems faced such as paying off debts and buying needed assets will be smaller if the company's liquidity ratio is high (Ross et al, 2003 : 33).

Kasmir (2016:128) suggests that the *current ratio* is the company's capacity used to measure the liquidity of a company's financial position. *A low current ratio* is generally considered to have a liquidation problem, however a *current ratio* that is too high is also said to be unfavorable , because a can indicate the presence of a number of unused funds that can reduce the company's ability (Sawir , 2009) . The more profitable the company is in its operations , the smoother the company's financing and funding will be .

c. Operational Risk

According to IBI (2016), operational risk is the risk caused by improper or defective internal processes, human errors, system failures, and external events that affect the company's operations. Every activity carried out by the company in obtaining income requires sacrifice . One of the factors that determine the level of profitability is cost (Wasis, 1993: 120). *Cost to income ratio* is an indicator that shows how much the company has to spend to generate revenue and can also be used to see the quality of management owned by the company . The quality of good management results in a low *cost to income* . This ratio also shows the efficiency of the company 's operations (De Haan, 2012).

4. *Size*

The size of the company is indicated by the size of the company's wealth or commonly referred to as firm size (Wimelda and Marlinah, 2013). Large companies are more resilient to the risk of bankruptcy and are less likely to experience financial difficulties. According to Rodoni and Ali (2014), how much of the assets owned by the company can be used to calculate the size of the company. Larger companies are more likely to have strong sources of funding. While small companies tend to use their own capital and short-term debt compared to long-term debt, because of lower costs. The size of the company is the size of the company seen from its total assets and profits, and the magnitude of its influence on the level of working capital. (Halim and Sarwoko, 2016) .

5. *Sales Growth*

Sales *growth* shows the level of change in sales from year to year , the extent to which the company can increase its sales compared to total sales as a whole (Kasmir, 2016). Companies that have relatively more capacity expansion projects, new product lines, carry out company acquisitions and other maintenance, as well as replace existing assets are examples of companies experiencing growth. Companies with high cash flow volatility and high growth options have incentives to reduce debt in the company's capital structure over a certain period of time (Handoo and Sharma, 2014).

B. Hypothesis and Research Model

1. The effect of credit risk on financial performance

Signal theory is associated with the risk undertaken by corporate managers and the expected impact on financial performance (Auronen 2003). According to Omasete (2014), shareholders assign company managers and executive boards with the role of managing risk. If risk is managed properly can help achieve the goal of maximizing the company's return on investment and income (Collier and Agyei-Ampomah 2006) , so it can be said that risk affects organizational performance

influence of credit risk on financial performance (ROE) is supported by the results of previous research conducted by Mutua (2016), that credit risk has a significant negative effect on ROE. In line with the findings of Sutojo (2000) which states that the high credit risk has an impact on the low income received, thereby reducing the profit (ROA and ROE) obtained by the company .

H1: Credit risk has a 9negative effect on company performance.

2. Effect of liquidity risk on financial performance

Liquidity risk affects financial performance. The current *ratio* measures the company's operations and liquidity level, the more profitable the company is in its operations, the smoother the company's financing and funding will be. If the liquidity ratio is high then the possibility of experiencing financial difficulties and buying the needed assets will be smaller (Ross et al, 2001 3:33). Research on the effect of liquidity risk on financial performance (ROE) has been previously conducted by Wani and Ahmad (2013) with the result that liquidity risk has 10a significant negative effect on ROE. The results of this study are also supported by research by Kamau and Njeru (2016), Murithi (2016), and Ongsongo, et al (2020) that liquidity risk has 10a significant negative effect on ROE.

Low CR is generally considered to have problems in liquidation, however a *current ratio* that is too high is also not good , because a it means there is a number of idle funds that can reduce the company's ability (Sawir, 2009) . The higher the ratio of current assets to current liabilities, the better the company's ability to cover current liabilities. Each company can determine the most effective *current ratio figure* in order to have a *current ratio position* that does not cause liquidity problems (too low ratio) or sacrifice profitability (too high ratio).

H2: Liquidity risk has a negative effect on company performance.

3. Effect of operational risk on financial performance

Banking Supervision document (BCBS, 2004) in Fahmy (2020) , operational risk is the risk of loss caused by failure or inadequate internal processes, people and systems, or external events. Operational risk is a risk that affects all business activities because it is an inherent thing in the implementation of an operational process or activity . The measure of operational risk using the *Cost to income ratio* is a ratio that shows how much the company must spend in obtaining revenue.

According to Manika m & Syafruddin (2013) the usefulness of this ratio to measure the level of efficiency of the company in carrying out its operations. If operational costs increase, the result is a decrease in profit before tax so that financial performance will decrease. Vice versa, if the value is small, it can improve financial performance. Previous research on the effect of operational risk on financial performance (ROE) was conducted by Kamau & Njeru (2019) that operational risk has a significant negative effect on ROE.

H3: Operational risk has a negative effect on company performance.

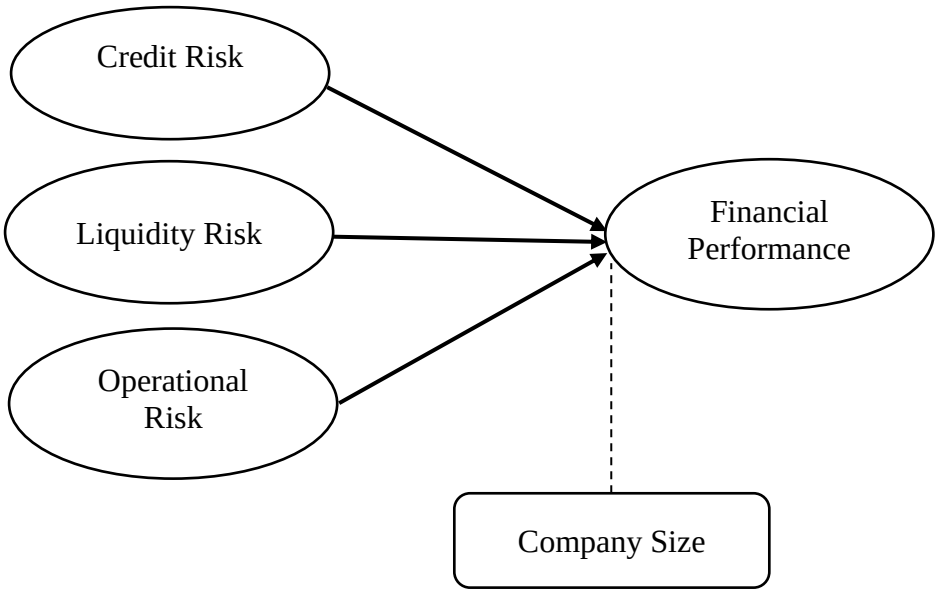


Figure 2. Research Model

III. RESEARCH METHODS

A. Research design

This study uses the approach associative quantitative . According to Suliyanto (2011 ; 15) associative research is research that has the aim of analyzing the influence or relationship between two or more variables. This study combines quantitative data to prove the theory by classifying it based on the objective , namely causal, and the study conducted helps test the hypotheses that have been set previously.

The object of this research is financial performance as the dependent variable , credit risk, liquidity risk, and operational risk as independent variables and firm size as a control variable. The population of this study is all *sub-sector companies coal mining* listed on the IDX for the 2016-2020 period. The sampling method used *purposive sampling method* , with the following criteria :

1) Coal *mining sub-sector companies* listed on the IDX in the 2016-2020 period.
2) Companies that publish complete annual reports for the 2016-2020 period.
3) Companies that have complete data for the variables studied in the 2016-2020 period.

Table 1. Criteria and Number of Samples

No.	Criteria	Amount
1	Coal *mining companies* listed on the Indonesia Stock Exchange in 2016-2020	26
2	Coal *mining companies* that do not publish complete annual financial statements for 2016-2020	(6)
3	Data relating to the variables to be studied in this study are incomplete	(4)
	Number of Samples	16

Source: www.idx.co.id (IDX Website)

B. Measurement of Research Variables

1. Profitability ratios describe the profit earning capacity of the organization and express positive or negative business activities. Indicator showing _ how far the company is in effective management of equity capital (net assets), the measurement of profit from investment by shareholders or shareholders is *Return on E quity* (Sawir 2009:20). *Return on Equity shows the* results of using the company's capital in creating net income. This ratio is used to measure how much net income is that will be generated for every rupiah of funds embedded in total capital (Hery, 2014).

$$\textbf{\textit{Return on equity}} = \frac{\textbf{Net Income}}{\textbf{Equity}} \boldsymbol{x100\%}$$

2. Credit risk is the risk of a company's failure when paying its obligations to financial institutions that have provided credit (Financial Services Authority, 2016). The ratio used in calculating credit risk is the *debt to income ratio* .

$$\boldsymbol{Debt\ to\ Income\ Ratio} = \frac{\boldsymbol{Total\ Debt}}{\boldsymbol{Income}} \boldsymbol{x100\%}$$

3. Liquidity Risk is the risk faced if the company does not have the ability to pay off its short- term financial obligations to maintain the continuity of its business activities (Harjito and Martono , 2010:55).

$$\boldsymbol{Current\ Ratio} = \frac{\boldsymbol{Current\ Assets}}{\boldsymbol{Current\ Liabilities}} \boldsymbol{x100\%}$$

4. Operational Risk is the risk caused by improper or defective internal processes, human errors, system failures, and external events that affect the company's operations (IBI , 2016) . Operational risk is measured by *the cost to income ratio* , which shows how much the company has to spend to generate revenue.

$$\boldsymbol{Cost\ to\ Income\ Ratio} = \frac{\boldsymbol{Operating\ expenses\ (excluded\ interest)}}{\boldsymbol{Total\ operating\ income}} \boldsymbol{x100\%}$$

5. *Firm Size* is the size of the company which is indicated by the size of the company's wealth (Wimelda and Marlinah, 2013). According to Halim and Sarwoko (2016) company size is the size of the company seen from its total assets and profits, and the large influence on the level of working capital.

$$\boldsymbol{Firm\ Size} = \boldsymbol{Ln(Total\ Aset)}$$

6. Growth is calculated based on the percentage change in income (Fosu, 2013: Soumadi & Hayajneh, 2012).

$$\boldsymbol{Growth} = \frac{\boldsymbol{Sales\ t - Sales\ t-1}}{\boldsymbol{Sales\ t-1}} \boldsymbol{x100\%}$$

C. Analysis Techniques

1. Panel Data Regression Analysis

This study uses panel data analysis techniques with the regression equation model as follows:

$$\text{R OE}_{i,t} = a + b_1 DTI_{i,t} + b_2 CR_{i,t} + b_3 CIR_{i,t} + b4SIZEi,t + b5Growth_{i,t} + e_{i,t}$$

Information :

$\text{ROE}_{i,t}$	: Profitability (*Return on e quity*)
a	: Constant
$DTI_{i,t}$	: Credit risk *(Debt to income)*
$CR_{i,t}$	: Liquidity risk (*Current ratio*)
$CIR_{i,t}$	: Operational risk (*Cost to income ratio)*
b , b_2 , b_3 , b_4, $b5$	: Regression coefficient of each independent variable
Size	: Total assets of company i in year t
Growth	: Company Growth
e	: Standard *error*

a. The Common Effect Model assumes that the coefficients are constant or can be interpreted as no effects from individual dimensions.

$$Y_{it} = a + B_k X_u^k + e$$

Information :

$Y_{i,t}$	: Dependent Variable at time t on unit *cross section* i
a	: intercept
B_k	: Parameters for the k-th variable
X_u^k	: The independent variable k at time t in the unit *cross section* i
e	: Standard *error*

b. Fixed Effect Model estimate panel data using dummy variables to capture the diversity of individuals.

$$Y_{it} = a + B_k X_u^k + \sum_{i=2}^{n} a_i D_i + e$$

Information :

$Y_{i,t}$	: Dependent Variable at time t on unit *cross section* i
a	: Intercept that varies between *cross sections*
B_k	: Parameters for the k-th variable
X_u^k	: The independent variable k at time t in the unit *cross section* i
Di	: Dummy Variable
e	: Standard *error*

c. The Random Effect Model estimates panel data on variables that are thought to have a relationship between time and between individuals .

$$\widehat{Y_{it}} = a + \beta_k X_{it}^k + \varepsilon$$
$$\varepsilon = u_i + v_t + w_{it}$$

Information:

$u_i \sim N(0, \sigma_u^2)$= Is a component of *cross-section error*

$v_i \sim N(0, \sigma_u^2)$= Is a component of *time-series error*

$w_i \sim N(0, \sigma_u^2)$= Represents *time-series* and *cross-section error*

2. Regression Model Selection Method

The F test was performed to determine a suitable model for calculating estimates. The Chow test is used to determine between *the fixed asset model* or *common asset* model to be used, as well as the Hausman test which determines the *fixed effect model* or *random effect model* and the Lagrange Multiplier test which determines whether *the common effect model* or *random effect model is* .

Chow test criteria :

a. If the probability F ≥ 0.05, then H_0 is accepted and the model uses the *common effects model*, then the Lagrange Multiplier test is continued.
b. If the probability F < 0.05, then H_0 is rejected and the model uses a *fixed effect model*, then the Hausman test is continued.

Hausman test criteria :

a. If the probability of *Chi square* ≥ 0.05, then H_0 is accepted and the model uses a $_{\text{random}}$ *effects model* , then the Lagrange Multiplier test is continued.
b. If the probability of *Chi square* < 0.05, then H_0 is rejected and the model uses a $_{\text{fixed}}$ *effect model*.

Lagrange Multiplier test criteria :

a. If the Breusch Pagan probability ≥ 0.05, then H_0 is accepted and the model uses the *common effects model*.
b. If the Beursch Pagan probability < 0.05, then H_0 is rejected and the model uses a *random effects model*.

3. Hypothesis testing

a. Model Accuracy Test (F Test)

The F test is used to test the accuracy of the model to see the predicted value in describing the actual conditions. If the independent variables affect the dependent variable simultaneously, then the regression equation model is included in the appropriate criterio.

To determine whether the regression equation model fits the criteria (fit) or not, by comparing the F table values with degrees of freedom: df:a, (k-1), (nk). The significance value in the F test if < 0.05 then shows that the independent variables are simultaneously able to describe changes in the dependent variable or the model is declared fit or fit.

b. Coefficient of Determination Test (*Adjusted* R2)

According to Suliyanto (2011:55), the coefficient of determination is the contribution of the independent variable to the dependent variable. The higher the coefficient of determination, the better the ability of the independent variable in explaining the variability of changes in the dependent variable.

c. Individual Parameter Significance Test (t-Statistical Test)

According to Suliyanto (2011: 62), the t-count value is used to partially test the effect on the dependent variable (per variable). Does the variable have a significant effect on the dependent variable by comparing the calculated t -value with the t-table value. To determine the acceptance of Ho or Ha from the existing hypothesis as follows:

Ho : There is no effect between the independent variable and the dependent variable.

Ha : There is a positive or negative influence between the independent variables on the dependent variable.

Testing Criteria:

1) Ho is accepted if t count ≤ t table, or Sig. > 0.05
2) Ha is accepted if t count > t table, or Sig. ≤ 0.05

IV. RESEARCH RESULTS AND DISCUSSION

A. Descriptive statistics

In the panel data regression model equation, the independent variables are credit risk, liquidity risk, and operational risk on financial performance as the dependent variable in *coal mining sub-sector companies* in 2016–2020 with *size* and *growth* as control variables. The following table is the result of descriptive statistics for each variable.

Table 2 . Descriptive statistics

Variable	N	Maximum	Minimum	Mean	Std. Deviation
ROE	54	0.479425	-0.120218	0.160885	0.133895
DTI	54	1.248707	0.127174	0.598070	0.367575
CR	54	3.774272	0.240779	1.912455	0.916197
CIR	54	1.768081	-0.991446	0.662033	0.497871
SIZE	54	32.25841	27.49350	29.79217	1.189454
GROWTH	54	0.645738	-0.318260	0.054116	0.228533

Source: Appendix

B. Panel Data Regression Model Selection Method

1) Chow test

Based on the results of the analysis to determine the best model using the Chow test between the *Common Effect Model* and *Fixed Effect Model l* , the results obtained are prob < 0.05, then choose the *Fixed Effect Model* .

Tab el 3. Chow Test Analysis Results

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistics	df	Prob.
Cross-section F	7.481571	(14.34)	0.0000
Cross-section Chi-square	75.937801	14	0.0000

Cross-section fixed effects test equation:
Dependent Variable: ROE
Method: Least Squares Panel
Date: 07/16/22 Time: 11:29
Samples: 2016 2020
Periods included: 5
Cross-sections included: 15
Total panel (unbalanced) observations: 54

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	-0.141969	0.469753	-0.302220	0.7638
DTI	-0.166708	0.057660	-2.891209	0.0057
CR	0.028045	0.020330	1.379519	0.1741
CIR	0.028133	0.034519	0.814983	0.4191
SIZE	0.010850	0.016176	0.670726	0.5056
GROWTH	0.130552	0.076702	1.702062	0.0952

R-squared	0.289389	Mean dependent var	0.160885
Adjusted R-squared	0.215367	SD dependent var	0.133895
SE of regression	0.118604	Akaike info criterion	-1.321618
Sum squared resid	0.675209	Schwarz criterion	-1.100620
Likelihood logs	41.68369	Hannan Quinn Criter.	-1.236388
F-statistics	3.909505	Durbin-Watson stat	0.665731
Prob(F-statistic)	0.004713		

2) Hausman test

Based on the results of the analysis to determine the best model using the Hausman test between the *Fixed Effect Model* and the *Random Effect Model* , the results obtained prob < 0.05, then choose the *Fixed Effect Model* . Therefore, the Langrange test is not necessary.

Tab el 4. Results of Hausman's Test Analysis

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistics	Chi-Sq. df	Prob.
Random cross-section	29.621717	5	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
DTI	-0.212871	-0.238352	0.004106	0.6909
CR	-0.049191	-0.006584	0.000243	0.0063
CIR	-0.086017	-0.018422	0.000440	0.0013
SIZE	0.090697	0.037189	0.002730	0.3058
GROWTH	0.170316	0.151405	0.000271	0.2505

Cross-section random effects test equation:
Dependent Variable: ROE
Method: Least Squares Panel
Date: 07/16/22 Time: 11:30
Samples: 2016 2020
Periods included: 5
Cross-sections included: 15
Total panel (unbalanced) observations: 54

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	-2.272063	1.677039	-1.354806	0.1844
DTI	-0.212871	0.085585	-2.487246	0.0179
CR	-0.049191	0.023441	-2.098487	0.0434
CIR	-0.086017	0.035118	-2.449384	0.0196
SIZE	0.090697	0.055583	1.631735	0.1120
GROWTH	0.170316	0.051007	3.339079	0.0020

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.825858	Mean dependent var	0.160885
Adjusted R-squared	0.728544	SD dependent var	0.133895
SE of regression	0.069761	Akaike info criterion	-2.209355
Sum squared resid	0.165466	Schwarz criterion	-1.472695
Likelihood logs	79.65259	Hannan Quinn Criter.	-1.925254
F-statistics	8.486490	Durbin-Watson stat	1.989476
Prob(F-statistic)	0.000000		

C. Panel Data Regression Analysis

Panel data regression analysis aims to determine the effect of the independent variables, namely Credit Risk (DTI), Liquidity Risk (CR), and Operational Risk (CIR) on the dependent variable, namely Financial Performance with Company Size and Growth as control variables . The results of the statistical analysis of panel data regression are shown in table 5 below.

Tabel 5. Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error
C	-2.272063	1.677039
DTI	-0.212871	0.085585
CR	-0.049191	0.023441
CIR	-0.086017	0.035118

SIZE	0.090697	0.055583
GROWTH	0.170316	0.051007

Based on table 5 , the panel data regression equation is obtained as follows :

$$ROE = -2.272063 - 0.212871DTI_{it} - 0.049191CR_{it} - 0.086017CIR_{it} + 0.090697SIZE_{it} + 0.170316GROWTH_{it}$$

D. Hypothesis Test

1. Coefficient of Determination (*Adjusted* R^2)

Tabel 6. R Squared . Test Results

Cross-section fixed (dummy variables)		
R-squared	0.825858Mean dependent var	0.160885
Adjusted R-squared	0.728544SD dependent var	0.133895
SE of regression	0.069761Akaike info criterion	-2.209355
Sum squared resid	0.165466Schwarz criterion	-1.472695
Likelihood logs	79.65259Hannan Quinn Criter.	-1.925254
F-statistics	8.486490Durbin-Watson stat	1.989476
Prob(F-statistic)	0.000000	

Source: Appendix

Based on table 6 , that the *Adjusted R-Squared* value is 0.728544 which means that the variation of changes in Financial Performance (Y) can be explained jointly by the variables of Credit Risk (X_1), Liquidity Risk (X_2), and Operational Risk (X_3) as well as Company Size (X_4) and Growth (X_5) is 72.85 % and the remaining 27.15 % is influenced by other variables not examined.

2. T Test (Partial Test)

Table 7. T . Test Results

Variable	Coefficient	t-Statistics	Prob.
C	-2.272063	-1.354806	0.1844
DTI	-0.212871	-2.487246	0.0179
CR	-0.049191	-2.098487	0.0434
CIR	-0.086017	-2.449384	0.0196
SIZE	0.090697	1.631735	0.1120
GROWTH	0.170316	3.339079	0.0020

Based on table 7 , the t statistical test can be explained as follows :

a) The probability value of the variable R credit risk is 0.0179 < 0 . 05, with a Coefficient value of *-0.212871* , then Ha is accepted. This means that partially credit risk has a significant negative effect on the financial performance of *coal mining sub-sector companies* .

b) The probability value of the Liquidity risk variable is 0.0434 > 0 . 05, with a Coefficient value of *-0.049191* , then Ha is accepted . This means that partially Liquidity Risk has a significant negative effect on the financial performance of *coal mining sub-sector companies* .

c) The probability value of the operational risk variable is 0.0196 > 0 . 05, with a Coefficient value of *-0.086017* , then Ha is rejected . This means that partially operational risk has a significant negative effect on the financial performance of *coal mining sub-sector companies* .

d) The probability value of the firm size variable is 0.1120 > 0 . 05, which means that partially the size of the company has no effect on the financial performance of the *coal mining sub-sector company* .

e) The probability value of the variable P growth is 0.0020 > 0 . 05, which means that partially growth has a significant effect on the financial performance of *coal mining sub-sector companies* .

3. F test (simultaneous test)

Tab el 8. Simultaneous Test Results

F-statistics	8.486490
Prob(F-statistic)	0.000000

Source: Appendix

Based on table 8 , the Prob value (F-statistic) is 0.000 <0.05. This means that the independent variables (Credit Risk, Liquidity Risk, and Operational Risk) jointly affect the Financial Performance of the *coal mining sub-sector companies* in 2016-2020 with Company Size and Growth as control variables .

E. Discussion

1. The Effect of Credit Risk (DTI) on Financial Performance

This test shows that credit risk as measured by the *Debt to Income Ratio* (DTI) has a negative direction and has a partially significant effect on financial performance as measured by *Return On Equity* (ROE). The results of the study can mean that if DTI increases then ROE decreases, and vice versa if DTI decreases then ROE increases.

Credit risk is a percentage that shows the company's ability to measure the risk of credit failure by the company. High credit risk will increase the risk of credit failure by the company so that it has the potential to affect the company's income. The higher the credit risk, the lower the income received so that it affects the decline in the profit earned by the company. Therefore, credit risk has a negative effect on financial performance. The results of this study are in line with the results of Murithi's research (2016) which found that credit risk has a significant negative effect on financial performance . However, it is different from the results of research conducted by Mutua (2016) which found that credit risk had a positive correlation with financial performance, and the research of Ongsongo, et al (2020) which found that credit risk did not affect financial performance.

2. Effect of Liquidity Risk (CR) on Financial Performance

The results of this study indicate that liquidity risk as measured by the *Current Ratio* (CR) has a significant negative effect on the company 's financial performance as measured by *Return On Equity* (ROE) . This means that the higher liquidity risk will lower financial performance .

The comparison between current assets and current liabilities illustrates the company 's ability to pay its short-term debt. High liquidity problems, namely current liabilities that exceed current assets, indicate that the company cannot pay all of its obligations when they fall due. Such conditions result in a decrease in the company's return on equity, which means that it affects the company's performance. However, the higher the ratio of current assets to current liabilities, the better the company's ability to pay current liabilities so that it does not sacrifice and does not cause a decrease in company profitability.

The results of this study are in line with the results of Wani and Ahmad (2013), Kamau and Njeru (2016) who found that liquidity risk has a significant negative effect on return on assets and return on equity. However, the results of the study are not in line with the research Henda (2017) which states that credit risk has no effect on financial performance. However, the company should be able to fulfill its obligations and pay its short-term debt because it can give a positive *signal* to investors and there will be no liquidation problem as a result of not meeting its obligations smoothly.

3. The Effect of Operational Risk (CIR) on Financial Performance

The results of this study indicate that operational risk as measured by the *Cost to Income Ratio* (CIR) has a significant negative effect on the company 's financial performance as measured by *Return On Equity* (ROE) . This means getting bigger operational risk faced by the company will reduce financial performance . The level of efficiency of the company in carrying out its operational activities has an effect on obtaining company profitability so that it will affect the company's financial performance. The findings of this study are consistent with the research of Mathuva (2009) who found that operational risk is inversely related to ROE.

According to De Haan (2012), the *cost to income ratio* shows the efficiency of the company's operations. Therefore, companies must continue to pay attention to this ratio because the lower the *cost to income ratio* , the better the quality of the company's management so that it gives a positive *signal* for investors to invest in the company. The results of a different study were carried out by Ongsongo, et al (2020) who in their research stated that operational risk had no effect on financial performance.

V. CONCLUSIONS AND IMPLICATIONS

A. Conclusions

1) Credit Risk has a negative effect on the Company's Financial Performance. This means that the size of credit risk affects financial performance. If DTI increases, ROE decreases.
2) Liquidity Risk has a negative effect on the Company's Financial Performance. This means that the greater the liquidity risk will affect the decline in financial performance.
3) Operational Risk has a negative effect on the Company's Financial Performance. This means that the greater the operational risk, the more it affects financial performance.

B. Implications

The implication of this research is that companies should manage their financial risk in order to generate more income. Credit risk must be controlled so that problems do not occur because the higher the credit risk, the lower the income received so that it affects the decrease in profits obtained by the company. The company is expected to pay more attention to the position of working capital to analyze and interpret its short-term financial position so that the company is able to use working capital efficiently.

Companies must be able to emphasize their operational costs in order to minimize operational risk because if there is an increase in operational risk, it means that the operational costs used are high so that the profit generated is low and makes investors feel dissatisfied . In addition, companies can do privatization in order to gain access and new sources of funding.

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