Research Paper

SEHATI e-issn 3025-7824

Socio-Economic and Humanistic Aspects for Township and Industry
Vol. 2, No. 2 (2024) pp 299-310
https://doi.org/10.59535/sehati.v2i2.290

The Effect of Profitability, Leverage and Liquidity on Firm Value in Coal Mining Companies Listed on the IDX for the Period 2018-2022

Mudzakkir Farij *, and Laila Wardani

Management Study Program, Faculty of Economics and Business, Universitas Mataram, Indonesia

mudzakkir.farij13@gmail.com

Open Access

This article contributes to:

Abstract. This study aims to examine the effect of profitability ratios, profitability ratios, and profitability ratios leverage and liquidity ratios to company value in coal mining companies listed on the Indonesia Stock Exchange for the period 2018-2022. The indicators used to measure profitability are Return on Assets (ROA), leverage using Debt to Equity Ratio (DER) and liquidity using Current Ratio (CR), while company value uses Tobin's Q (Rasio Q). The type of research used is associative research with a quantitative approach. The population in this study were all coal mining companies listed on the Indonesia Stock Exchange with the sampling method, namely purposive sampling, Based on the criteria set, a total of 15 company samples were obtained. The data collection technique uses documentation techniques, while the data analysis method uses multiple linear regression analysis using the SPSS program. Based on the test and analysis of the research results, it shows that the profitability and leverage has a positive and significant effect on firm value, while liquidity has a positive and insignificant effect on firm value.

Keywords: Profitability, Leverage, Liquidity, Firm Value.

1. Introduction

Firm value reflects the perception of shareholders or investors regarding a company's worth, often associated with the company's share price [1]. Researchers commonly measure firm value using the Q Ratio or Tobin's Q, which is calculated by dividing the market value of a company by the replacement cost of its assets. One of the main advantages of the Q Ratio is its ability to account for intangible assets, providing a more comprehensive assessment of a company's value [2]. Additionally, this ratio reflects the company's prospects and market speculations, offering insights beyond mere tangible assets.

Several factors influence firm value, despite the comprehensive analysis of both internal and external aspects of the company, including profitability, liquidity, and leverage. According to Brastama and Yadnya [3], the profitability ratio measures a company's ability to maximize profits through various resources such as sales activities, cash, capital, workforce, branches, and other operations that enhance profitability. Leverage, on the other hand, assesses the extent of funds provided by creditors, comparing total debt to the company's overall assets [4]. During the Covid-19 pandemic, in 2020 the Jakarta Composite Index (JCI) was shaken by the pandemic which had a domino effect on company performance causing the JCI to fall by 5.09% [5]. However, JCI was able to rise in 2021 by 10.08%. The rapid transmission of the virus has made the Indonesian government implement a policy of lockdown or large-scale social policies (PSBB) in order to suppress the spread of the Covid-19 virus [6]. The policy also has an impact on coal mining companies where many coal mining companies are forced to have coal mining activities closed or temporarily postponed. The decline in mining activity causes investors to be on guard in investing so that it is possible that a decrease in company value can occur.

Article info
Submitted: 2024-4-20
Revised: 2024-6-04
Accepted: 2024-6-04

Table 1 Average Development of Coal Mining Company Value [7]

Year	N	Average Tobin's Q (times)	Change (%)
2018	15	32,146.22	NA
2019	15	9,936.29	- 69.09
2020	15	13,148.17	32.33
2021	15	13,137.15	- 0.08
2022	15	23,583.73	79.51

From the table of average company value using Tobin's Q when viewed as a whole over the past 5 years, it can be seen that the average change tends to be unstable. In 2022 the average Tobin's Q recorded the largest change over 5 years with a change of 79.51%. 2019 was a year when the company value decreased by 69.09%, this coincided with the trade war between the United States and China which was also followed by the emergence of the covid-19 pandemic virus outbreak. The change began in 2020 by 32.33%, where that year was a transitional year after the occurrence of covid-19. This change is considered quite significant, although in 2021 it must go through adjustments so that there is a decrease of 0.08%. This increase indicates that the company's performance is getting better, which is supported after the occurrence of covid-19 where the policy is implemented lockdown has been relaxed so that coal mining activities can start operating again.

Table 2 Average Development of ROA (100%), DER (times) and CR (times) of Coal Mining Companies [8]

Description	Year	N	Average	Change (%)
ROA	2018	15	11.76	NA
	2019	15	6.08	-48.30
	2020	15	6.38	4.93
	2021	15	16.10	152,35
	2022	15	26.63	65,40
DER	2018	15	3.48	NA
	2019	15	1.63	-53.16
	2020	15	3.21	96.93
	2021	15	1.61	-49.84
	2022	15	1.02	-36.64
CR	2018	15	1.50	NA
	2019	15	2.13	42
	2020	15	2.29	7.51
	2021	15	2.05	-10.48
	2022	15	1.91	-6.83

In the average development table above, it can be seen in the ROA section for 5 years that coal mining companies are able to generate net profit which is recorded on average above 30%, in other words that in every $ 100 of assets, the company is able to generate net profit as much as> 30% [3]. This is in line with the average ROA value which has increased from year to year for these 5 years [9]. In the CR section for the last 5 years, the average company has also been able to optimize its short-term debt for 5 years. This can be seen from the average CR ratio which is at 2 times, which shows that the company is able to optimize the current assets owned by the company. When viewed as a whole, the average CR tends to decrease, this indicates that the company is getting better at utilizing current assets against the company's current debt. Company value is very important to be considered by investors in investing [10].

Coal mining companies are a sector of companies that are considered to be able to survive and compete in the era of trade wars between the United States and China as well as the pressure from the occurrence of policy lockdown due to the covid-19 pandemic [11]. Although it is not a company classified in the Health sector, coal mining companies are able to survive and rise from the effects of these 2 cases [12]. 2019 was

the toughest year for the company and investors because the company experienced a high decline of 69.09%. However, in the following years the company was able to rise from these two problems, where in the last year the company experienced a fairly high increase in value of 79.51% [13]. According to Manullang et al. [14] profitability has a positive and significant effect on firm value. The results of this study differ from research conducted by Claessens et al. [4] which states that profitability has a negative and significant effect on firm value.

According to Nahar et al. [15] variables leverage provides a significant positive effect on firm value. The results of this study are not in line with the results of research conducted by Sari and Sedana [16] leverage provides a negative and significant influence on firm value. Moreover the liquidity variable has a positive effect on firm value. The results of this study are not in line with the results of research found by Razali et al. [17] liquidity variables have a negative effect on firm value. Based on the phenomenon and some of the research results, researchers are interested because of the differences in the results of each study, making it interesting to study. Company growth is the result of management work that can support an increase in company value, where financial aspects such as profit and debt levels are important factors to consider. From this, it can be found that the problem in this study is whether the profitability factor is important., leverage and liquidity have a positive and significant effect on the value of coal mining companies listed on the Indonesia Stock Exchange.

2. Methods

The problem in this study reflects the nature of the relationship between variables that are interrelated with each other. The nature of this relationship is suitable for research using the Associative Research method with a Quantitative approach [18]. Associative research is research that examines the relationship between two or more variables to build a theory that functions to explain, predict, and control certain symptoms. The variables to be tested for their influence are Profitability, Leverage, and Liquidity on Firm Value in coal mining companies listed on the IDX for the 2018-2022 period. The object of this research is coal mining companies listed on the Indonesia Stock Exchange (IDX) during the 2018-2022 period. Based on references from www.idnfinancials.com, There are 29 coal mining companies listed on the IDX, and through purposive sampling, 15 companies were selected as samples that met the research criteria for five years. The population of this study is 29 coal mining companies listed on the IDX. Data was collected through a literature survey by collecting data from books, notes, journals, and related reports. The secondary data used is the financial statements of coal mining companies for the period 2018-2022.

The research sample consists of 15 companies that meet the established sample selection criteria. The sampling technique used is Non-Probability Sampling with Purposive Sampling method, where researchers select samples based on research objectives. While the data collection technique used is documentation study. The data collection tool is a documentation instrument that helps researchers collect data systematically. This study uses quantitative data that answers research questions with a structured design. The data source is secondary data in the form of financial reports of coal mining companies listed on the IDX as of December 31, which are published. Research variables include Firm Value (dependent variable), Profitability (X1), Leverage (X2), and Liquidity (X3) as independent variables. Company Value is measured using Tobin's Q, Profitability is measured by ROA, Leverage is measured by DER, and Liquidity is measured by Current Ratio (CR).

The data analysis procedure begins with descriptive analysis of variables. The classical assumption test includes normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test to ensure that the data meets the requirements for regression analysis. Furthermore, multiple linear regression analysis is used to determine the effect of independent variables on the dependent variable. The multiple linear regression formulation is $Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + e$ [19]. Hypothesis proving is done with the F test to test the feasibility of the model and the t test to test the significance of each independent variable on the dependent variable. The coefficient of determination test (Adjusted R Square) is used to see the influence of the independent variable on the dependent variable.

3. Result and Discussion

3.1 Company Value

Company value is a benchmark for investors against the company's management performance in managing all company resources. The method used to measure the value of this company is Tobin's Q. Q ratio or Tobin's Q is the company value obtained by dividing market value of asstes with total book value of asstes. The Q ratio is a means of estimating whether the market value of a company is experiencing undervalued or overvalued. Tobin's Q can be expressed in the following formula.

$$\mathbf{Q} = \frac{\mathbf{Market\ Value\ of\ Equity + Total\ Debt}}{\mathbf{Total\ Assets}} \quad (1)$$

Table 3 Tobin's Q Calculation Results Coal Mining Company

No	Company Code	Company Period					Average (times)
		2018	2019	2020	2021	2022	
1	ADRO	0.73	0.94	0.88	1.09	1.14	0.96
2	BUMI	1.82	1.36	1.51	1.26	1.2	1.43
3	PTBA	2.4	1.45	1.64	1.19	1.31	1.60
4	ITMG	1.42	1.04	1.23	1.25	1.35	1.26
5	DSSA	0.76	0.77	0.75	1.3	0.85	0.89
6	HRUM	0.75	0.71	1.17	2.42	1.39	1.29
7	INDY	0.85	0.84	0.93	0.92	0.89	0.89
8	MBAP	1.7	1.14	1.52	1.41	2.19	1.59
9	PTRO	0.87	0.83	0.87	0.8	0.97	0.87
10	TOBA	1.05	0.97	1.04	1.34	0.89	1.06
11	SMMT	0.96	0.83	0.86	0.65	1.8	1.02
12	KKGI	1.11	1.05	1.14	1.01	1.16	1.09
13	ARII	1.56	1.34	1.21	1.08	1	1.24
14	FIRE	20.46	1.13	3.6	1.65	1.04	5.58
15	BYAN	4.47	3.38	2.73	2.84	12.07	5.10
Average		**2.73**	**1.19**	**1.41**	**1.35**	**1.95**	**1,72**

In table 3, it can be explained that the average company value in coal mining companies as measured using Tobin's Q is 1.72. This value indicates that the company is able to optimize its performance efficiently. Although it has decreased from year to year, at the end of the 5-year period, the company was able to rise with a fairly high average value, indicating that the management of coal mining companies is able to manage their company's performance effectively.

3.2 Profitability

The profitability ratio used in this study is the Return on Assets Ratio or Return On Assets Ratio (ROA). ROA ratio is a ratio used in measuring the percentage level of profit from net profit after tax divided by the company's total assets. Return On Assets Ratio can be expressed in the following formula.

$$ROA = \left(\frac{Net\ profit\ after\ tax}{Total\ assets}\right) x\ 100\% \qquad (2)$$

Table 4 Calculation Results of Return on Assets of Coal Mining Companies

No	Company Code	Company Period					Average (%)
		2018	2019	2020	2021	2022	
1	ADRO	6.76	6.03	2.48	13.56	26.26	11.02
2	BUMI	4.05	0.26	-9.84	5.29	12.40	2.43
3	PTBA	21.31	16.00	10.01	22.25	28.17	19.55
4	ITMG	17.94	10.46	3.26	28.53	45.43	21.12
5	DSSA	3.57	1.93	-2.00	8.82	20.27	6.52
6	HRUM	8.59	0.56	12.09	11.26	29.70	12.44
7	INDY	2.67	0.14	-2.96	1.72	14.21	3.16
8	MBAP	29.00	18.33	15.09	39.02	58.52	31.99
9	PTRO	4.17	5.68	0.79	0.72	6.90	3.65
10	TOBA	13.57	6.89	4.64	7.65	10.44	8.64
11	SMMT	10.23	0.72	-2.65	23.77	34.06	13.23
12	KKGI	0.41	4.28	-3.82	17.40	22.95	8.24
13	ARII	-8.07	-1.52	-4.55	0.25	5.81	-1.62
14	FIRE	-0.51	0.08	-0.19	9.29	-25.99	-3.46
15	BYAN	45.56	18.33	21.27	52.02	58.34	39.10
Average		**10.62**	**5.88**	**2.91**	**16.10**	**23.16**	**11.73**

In table 4, it can be explained that the average profitability of coal mining companies as measured using return on asstes is 11.73%, with annual average changes that tend to increase. The ROA value of 11.73% indicates that the company's profitability is in good condition. This implies that the company's performance is good in maximizing company profits.

3.3 Leverage

The leverage ratios used in this study are Debt to Equity Ratio (DER). The DER ratio is a ratio that measures the company's ability to use all or total corporate debt with total equity owned by the company. Debt to Equity Ratio can be expressed in the following formula.

$$\mathbf{DER} = \frac{\mathbf{Total\ Debt}}{\mathbf{Total\ equity}} \qquad (3)$$

Table 5 Calculation Results Debt to Equity Ratio Coal Mining Company

No	Company Code	Company Period					Average (times)
		2018	2019	2020	2021	2022	
1	ADRO	0.60	0.81	0.61	0.70	0.65	0.67
2	BUMI	6.76	6.26	24.85	5.53	0.59	8.80
3	PTBA	0.49	0.42	0.42	0.49	0.57	0.48
4	ITMG	0.49	0.37	0.37	0.39	0.35	0.39
5	DSSA	1.24	1.27	0.83	0.72	1.15	1.04
6	HRUM	0.20	0.12	0.10	0.34	0.29	0.21
7	INDY	2.26	2.46	3.03	3.18	1.68	2.52
8	MBAP	0.40	0.32	0.32	0.29	0.22	0.31
9	PTRO	1.91	1.59	1.62	1.05	1.00	1.43
10	TOBA	1.33	1.40	1.65	1.42	1.12	1.38
11	SMMT	0.70	0.49	0.56	0.29	0.16	0.44
12	KKGI	0.35	0.35	0.36	0.36	0.38	0.36
13	ARII	34.06	6.90	11.79	8.45	5.39	13.32
14	FIRE	0.77	0.60	0.73	0.61	0.70	0.68
15	BYAN	0.70	1.06	0.88	0.31	0.98	0.79
Average		**3.48**	**1.63**	**3.21**	**1.61**	**1.02**	**2.19**

Table 5 shows that the average leverage in coal mining companies as measured using debt to equity ratio is 2.19 with an annual average change that tends to decrease. The DER value of 2.19 indicates that the company's leverage is in a less than optimal condition. This value implies that the company's performance is less than optimal in utilizing the use of debt owned by the company, so that the company's value is unable to increase efficiently.

3.4 Liquidity

The liquidity ratios used in this study are Current Ratio or Current Ratio *Current Ratio* (CR). *Current Ratio* can be expressed in the following formula.

$$CR = \frac{Current\ assets}{Current\ liabilities} \qquad (4)$$

Table 6 Calculation Results Debt to Equity Ratio Coal Mining Company

No	Company Code	Company Period					Average (times)
		2018	2019	2020	2021	2022	
1	ADRO	1.96	1.71	1.51	2.08	2.17	1.89
2	BUMI	0.40	0.39	0.31	0.27	0.84	0.44
3	PTBA	0.24	2.49	2.16	2.43	2.28	1.92
4	ITMG	1.97	2.03	2.03	2.71	3.26	2.40
5	DSSA	1.22	1.30	1.55	1.70	1.36	1.43
6	HRUM	4.56	9.22	10.07	3.07	2.30	5.84
7	INDY	2.18	2.01	1.97	1.84	1.70	1.94
8	MBAP	2.64	3.60	3.74	3.98	5.36	3.86
9	PTRO	1.69	1.52	1.57	1.38	1.16	1.46
10	TOBA	1.22	0.92	0.73	1.74	1.98	1.32
11	SMMT	0.33	0.61	0.58	2.13	1.07	0.94
12	KKGI	1.48	2.17	2.32	2.42	2.58	2.19
13	ARII	0.23	0.24	0.21	0.44	0.72	0.37
14	FIRE	1.17	2.80	2.33	1.39	0.49	1.64
15	BYAN	1.24	0.89	3.25	3.13	1.31	1.96
	Average	**1.50**	**2.13**	**2.29**	**2.05**	**1.91**	**1.97**

Table 6 explains that the average liquidity of coal mining companies as measured using the current ratio is 1.97 with annual average changes that tend to fluctuate. The CR value of 2.19 indicates that the company's liquidity is in good condition. This implies that coal mining companies are able to manage current assets against the company's current liabilities.

3.5 Descriptive Statistical Analysis Results

Table 7 Descriptive Statistical Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Tobin's Q	75	0.60	1,82	1.1364	0.29381
ROA	75	-25.99	52.02	11.4664	14.73357
DER	75	0.10	6.90	1.4688	1.87987
CR	75	0.33	4.22	2.0407	0.92412

Based on table 5, it can be seen that the descriptive statistics with a sample size of 15 companies on the Company Value variable proxied using the Q Ratio or Tobin's Q has a minimum value of 0.60 and a maximum value of 1.82. The average company value owned by these 15 coal mining companies shows positive results where the value is 1.13. The standard deviation value owned by the company value is 0.29 where the value is brought to the average so that it can be interpreted that the Q Ratio or Tobin's Q has low data variation. Profitability variable proxied using Return on Assets (ROA) has a minimum value of -25.99 and a maximum value of 52.02. The average ROA data owned by these 15 companies is 11.46. Where this shows that each $ 1 the company's assets can generate

$11.46 of profit. The standard deviation value owned by profitability is 14.73. Where this value is above the average so it can be interpreted that Return on Assets has high data variation.

Variables Leverage which is proxied using Debt to Equity Ratio (DER) has a minimum value of 0.10 and a maximum value of 6.90. The average DER data owned by these 15 companies is 1.46. Where this shows that every $ 1 of capital or assets owned by the company is used to finance $ 1.46 of the company's liabilities. The standard deviation value owned by leverage is 1.87. Where this value is above the average so that it can be interpreted that Debt to Equity Ratio has high data variation. Liquidity variable proxied using Current Ratio (CR) has a minimum value of 0.33 and a maximum value of 4.22. The average CR data owned by these 15 companies is 2.04. Where this shows that every $ 1 current liability owned by the company can be met with $ 2.04 of the company's current assets. The standard deviation value owned by profitability is 0.92 where the value is brought to the average so that it can be interpreted that Current Ratio has low data variation.

3.6 Classical Assumption Test Results

Assumption testing is done first before forming a regression model to ensure that the resulting model provides the best, linear, and unbiased estimation (BLUE: Best Linear Unbiased Estimator). In this study, classical assumption testing includes four types of tests, namely normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. First, based on the results of the normality test, a significant value of 0.000 indicates that the data is not normally distributed before data transformation. However, after data transformation, it shows a significant value of 0.084, which is greater than the significance level of 0.05, so the data is considered normally distributed. Second, the multicollinearity test results show that the VIF values for the profitability (ROA), leverage (DER), and liquidity (CR) variables are 1.317, 1.199, and 1.108, respectively, all of which are below the threshold value of 10. In addition, the Tolerance values for the three variables are also well above 0.10. Therefore, it can be concluded that there is no multicollinearity between the independent variables in this regression model.

Third, the heteroscedasticity test results show that the significance value for the profitability variable (ROA) is 0.867, leverage (DER) is 0.551, and liquidity (CR) is 0.695. All of these values are above 0.05, indicating that the regression model does not experience symptoms of heteroscedasticity. Finally, based on the autocorrelation test, the Durbin-Watson (DW) value of 1.774 is within the range of -2 to 2. This indicates that there is no autocorrelation in the data, so this regression model is free from autocorrelation problems.

3.7 Multiple Linear Regression Analysis

The results of multiple linear regression can be seen in Table 8.

Table 8 Multiple Linear Regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.881	0.084		10.505	0.000
ROA	0.007	0.002	0.331	2.677	0.009
DER	0.047	0.018	0.303	2.573	0.012
CR	0.054	0.036	0.170	1.498	0.138

Notes: Ftable of 5.074 with a significance of 0.003, and R2 of 0.142.

Based on multiple linear regression tests in table 7, multiple linear regression equation data can be obtained as follows:

$$\textbf{Tobin's Q} = \mathbf{0,881} + \mathbf{0,007}\,(\textbf{ROA}) + \mathbf{0,047}\,(\textbf{DER}) + \mathbf{0,054}\,(\textbf{CR}) \quad (5)$$

1. The constant value (α) of 0.881 explains that if in this study there is a profitability variable, leverage and liquidity is 0, then the company value (Y) is 0.881 times.
2. The regression coefficient value of the profitability variable is obtained at 0.007 with a positive X1 value, indicating a unidirectional relationship between the profitability variable and firm value. Where if profitability increases by 1 percent, the company value will increase by 0.007 times.
3. The regression coefficient value of the leverage variable is obtained at 0.047 with a positive X2 value, indicating a unidirectional relationship between the leverage variable and firm value. Where if the leverage increases by 1 unit, the company value will increase by 0.047 times.
4. The regression coefficient value of the liquidity variable is obtained at 0.054 with a positive X3 value, indicating a unidirectional relationship between the liquidity variable and firm value. Where if liquidity increases by 1 unit, the company value will increase by 0.054 times.

3.8 Hypothesis Test Results

Based on the model feasibility test (F test) in the table 7 information, it can be noted that the Fhitung value (SPSS output in the sig column) is 0.003. Where this value is smaller than the predetermined significance value of (0.05). From this value, it can be concluded that the regression model in the f test is considered feasible. While the t test in table 7 above, it can be noted that the results of the partial effect test on profitability and leverage, obtained a significance value <0.05, it can be concluded that profitability and leverage have a significant positive effect on firm value. From the calculation of multiple linear regression analysis for the liquidity variable, a significance value of 0.138 is obtained. Where this value has a significance level of 0.138> 0.05, it can be concluded that liquidity has a positive and insignificant effect on firm value. Based on the coefficient of determination test seen from Adjusted R Square in table 7, it can be noted that the value of Adjusted R-Square amounted to 0.142 or 14.2%. This means that the profitability variable, leverage and liquidity are simultaneously able to provide an explanation for the firm value variable of 14.2% while the remaining 85.8% is explained by other factors not examined in this study.

3.9 Discussion

Based on hypothesis testing conducted on 15 coal mining companies for the 2018-2021 period using the SPSS 26 program which discusses profitability ratios, profitability ratios, and profitability ratios leverage and liquidity ratio to firm value obtained the following results:

3.9.1 Effect of Profitability Ratio on Firm Value

The first hypothesis in this study examines the effect of profitability ratio on firm value. Profitability ratio is a ratio to assess the company's ability to seek profit or profit in a certain period [16]. High profitability indicates good prospects for the company so that it can increase stock prices through increased investor interest so as to encourage increased company value. Based on the test results, it shows that the significance value of the profitability ratio which is proxied using return on asstes to company value (Tobin's Q) is 0.009 <0.05 with a positive regression coefficient value, so profitability has a positive and significant effect. This means that this result is in line with the statement in hypothesis 1 so that H1 is accepted.

Profitability in this study shows a positive influence on firm value. Positive results indicate that there is a unidirectional relationship between profitability and firm value. In other words, the higher the profitability, the higher the company value, and vice versa.

This can show the company's prospects are getting better because it means that there is a potential increase in profits obtained by the company. improved prospects are used as a positive signal for investors to invest, so as to increase stock sales. Increased market demand in purchasing shares can increase the share price so that it can encourage an increase in company value.

This research supports signaling theory, which posits that high profitability levels can indicate promising company prospects. This, in turn, attracts positive responses from investors, ultimately leading to an increase in the company's value. In essence, the higher a company's profitability, the greater its value [20]. These findings align with previous studies. For instance, research conducted by Ferriswara et al. [21] demonstrates that profitability positively affects firm value. Similarly, the study by Idris [22] also concludes that profitability has a positive impact on firm value.

3.9.2 Effect of Leverage Ratio on Firm Value

The second hypothesis in this study examines the effect of the ratio leverage to firm value. Leverage is the use of a source of funds that has a fixed burden in the hope that it will provide additional profits that are greater than the fixed burden so that it will increase the profits available to shareholders [23]. Based on the test results, it shows that the significance value of the leverage ratio proxied using debt to equity ratio to company value (Tobin's Q) is 0.012 <0.05 with a positive regression coefficient value, so that leverage has a positive and significant influence. This means that these results are in line with the statement in hypothesis 2 so that H2 is accepted. In this study Leverage shows a positive influence on firm value. The positive result indicates that there is a unidirectional relationship between leverage with firm value. In other words, the higher the leverage the higher the company value, and vice versa. This can be explained that company management is able to manage leverage to the optimal value of the company or the balance of utilization of the company's sources of funds, which can be obtained through own capital and loans. In accordance with the theory trade-off which suggests that the capital structure through leverage optimal by balancing the benefits of using debt with bankruptcy costs and agency costs [24].

This research supports the theory trade-off where this theory balances the benefits and risks that arise as a result of using a debt. If the benefits are greater, then additional debt is still allowed. If the risk is greater due to the use of debt, then additional debt is not allowed. In this case, MM Theory with tax also has an influence on this variable, where the existence of corporate debt can reduce taxes through tax interest costs so as to increase company profits. Companies that use debt and do not use debt in operating the company have differences in paying income tax. Companies that use debt will pay less tax than companies that do not use debt. This is because there is a process of paying debt interest costs so that a reduction can be minimized when the tax payment process occurs. Meanwhile, companies that do not use debt will not go through the process of paying debt interest costs, so that additional costs occur when the tax payment process occurs because they do not go through the process of reducing debt interest costs. From this, the use of debt for investors will provide a positive response, so that the use of debt which is a positive signal for investors can increase the value of the company.

The results of this study are in line with previous research where research conducted by Ombuh et al. [25] shows the results that Leverage provides a positive and significant influence on Firm Value. This research is in line with research conducted by Aulia et al. [26] which shows the results that Leverage has a positive and significant effect on Firm Value.

3.9.3 Effect of Liquidity Ratio on Firm Value

The third hypothesis in this study examines the effect of liquidity ratio on firm value. Liquidity ratio is a ratio analysis that can show how a company's ability to meet or fulfill short-term liabilities (debt) owned by a company (Fred Weston, 2008). Based on the test results, it shows that the significance value of the liquidity ratio which is proxied using the liquidity ratio. current ratio to company value (Tobin's Q) is 0.138> 0.05 with a positive regression coefficient value. This means that this result is not in line with the statement in hypothesis 3 so that H3 is rejected. Liquidity in this study shows a positive but insignificant effect on firm value. Positive but insignificant results indicate that there is a unidirectional relationship but does not have any effect between liquidity and firm value. In other words, the higher the liquidity, it does not guarantee the higher the company value, and vice versa.

This can be explained because the company is said to be illiquid or unable to pay off the short-term debt owned by the company. Covid-19 has a huge impact on the company's ability to pay off short-term debt owned by the company. Increasing the average company value does not guarantee an increase in the average liquidity ratio. As is the case when viewed at the average value of coal mining companies since the last 5 years has increased significantly. However, on the contrary, the average liquidity ratio tends to fluctuate from year to year during the 5-year period. This can prove that the company is experiencing difficulties due to the pandemic.

Companies that have a high liquidity ratio tend to hold back profits. The accumulation of reserve funds owned by the company without being invested can affect the company's value, but this policy cannot be said to be wrong. This is because a high level of liquidity ratio will make the company allocate more funds to pay off short-term liabilities, providing space for the company to operate the company in order to increase the company's value [27]. However, this is a double-edged knife, because the risk is that the dividends paid to the company's shareholders will be lower. This decision is good for the company but not good for investors so that it becomes a negative signal for investors. Declining investor confidence can reduce investor interest in investing so that it has an impact on the decline in company performance in managing the company's current assets. The company's difficulty in managing short-term debt owned by the company causes the company's value to be lower.

This research does not support signaling theory, which posits that a high liquidity value will elicit a positive response from shareholders as it reflects the company's ability to pay off short-term debt. Instead, this research suggests that the higher the liquidity value, the lower the company value. These findings align with previous research Sucipto and Chasanah [7], which indicates that liquidity has a positive but insignificant effect on firm value. However, they contradict Juhandi et al. [28], which concludes that liquidity has a positive and significant effect on firm value.

4. Conclusion

Based on the results of research and testing the effect of profitability, leverage, and liquidity on firm value in coal mining companies listed on the Indonesia Stock Exchange for the period 2018-2022, it can be concluded that profitability has a positive influence on firm value. This shows that the higher the level of profitability of a company, the higher the value of the company in the market. In addition, leverage also shows a positive influence on firm value, indicating that effective use of debt can increase firm value as long as the company is able to manage its debt well. However, although liquidity has a positive influence on firm value, the effect is not significant.

5. Declaration

Author contributions and responsibilities - The authors made major contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript.

Funding - This research did not receive external funding.

Availability of data and materials - All data is available from the author.

Competing interests - The authors declare no competing interests.

Did you use generative AI to write this manuscript? - I do not use AI assistance in my manuscript.

Declaration of generative AI and AI-assisted technologies in the writing process - During the preparation of this work the author did not use AI to write, edit, or other things related to the manuscript.

6. References

[1] A. Firmansyah, M. C. Husna, and M. A. Putri, 'Corporate Social Responsibility Disclosure, Corporate Governance Disclosures, and Firm Value In Indonesia Chemical, Plastic, and Packaging Sub-Sector Companies', *1*, vol. 10, no. 1, Art. no. 1, Mar. 2021, doi: 10.15294/aaj.v10i1.42102.

[2] T. Qamara, A. Wulandari, A. Sukoco, and J. Suyono, 'The Influence of Current Ratio, Debt to Equity Ratio, And Total Asset Turnover Ratio on Profitability of Transportation Companies Listed On the Indonesia Stock Exchange 2014-2018', *IJIEEB International Journal of Integrated Education, Engineering and Business eISSN 2615-1596 pISSN 2615-2312*, vol. 3, no. 2, pp. 81–93, 2020.

[3] R. F. Brastama and I. P. Yadnya, 'The effect of capital adequacy ratio and non performing loan on banking stock prices with profitability as intervening variable', *American Journal of Humanities and Social Sciences Research (AJHSSR)*, vol. 4, no. 12, pp. 43–49, 2020.

[4] S. Claessens, N. Coleman, and M. Donnelly, '"Low-For-Long" interest rates and banks' interest margins and profitability: Cross-country evidence', *Journal of Financial Intermediation*, vol. 35, pp. 1–16, 2018.

[5] I. R. Andaningsih and T. Setyowati, 'Financial Control Behaviours a Strategy For Small and Medium Sized Business To Survive During The Covid 19 Pandemic in Pondok Melati District,Bekasi City West Java', *The Academy Of Management and Business*, vol. 1, no. 1, Art. no. 1, Apr. 2022, doi: 10.55824/tamb.v1i1.2.

[6] M. Loxton, R. Truskett, B. Scarf, L. Sindone, G. Baldry, and Y. Zhao, 'Consumer Behaviour during Crises: Preliminary Research on How Coronavirus Has Manifested Consumer Panic Buying, Herd Mentality, Changing Discretionary Spending and the Role of the Media in Influencing Behaviour', *Journal of Risk and Financial Management*, vol. 13, no. 8, Art. no. 8, Aug. 2020, doi: 10.3390/jrfm13080166.

[7] A. Sucipto and N. Chasanah, 'Effect Of Liquidity Ratio, Profitability, And Solvency On Stock Returns With Capital Structure As An Intervening Variable (Study On Food And Beverage Sub Sector Listed In Indonesia Stock Exchange (Idx) Period 2013-2017)', *Ekspektra: Jurnal Bisnis dan Manajemen*, vol. 3, no. 1, pp. 52–68, 2019.

[8] S. Suroso, 'Analysis of the Effect of Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR) on the Profits of Go Public Banks in the Indonesia Stock Exchange (IDX) Period 2016 – 2021', *Economit Journal: Scientific Journal of Accountancy, Management and Finance*, vol. 2, no. 1, Art. no. 1, Mar. 2022, doi: 10.33258/economit.v2i1.610.

[9] D. L. Amoroso and Y. A. N. Chen, 'Constructs Affecting Continuance intention in consumers with mobile financial apps: a dual factor approach', *Journal of Information Technology Management*, vol. 28, no. 3, pp. 1–24, 2017.

[10] Z. Abidin, 'Evaluation of The Impact of The Full Systemic Land Registration Policy Implementation in Baubau City', *Jurnal Administrasi Publik (Public Administration Journal)*, vol. 12, no. 1, Art. no. 1, Jun. 2022, doi: 10.31289/jap.v12i1.6073.

[11] H. Chen and S. C. Greitens, 'Information capacity and social order: The local politics of information integration in China', *Governance*, vol. 35, no. 2, pp. 497–523, 2022, doi: 10.1111/gove.12592.

[12] A. Abu-Rumman, A. Al Shraah, F. Al-Madi, and T. Alfalah, 'The impact of quality framework application on patients' satisfaction', *International Journal of Human Rights in Healthcare*, vol. 15, no. 2, pp. 151–165, Jan. 2021, doi: 10.1108/IJHRH-01-2021-0006.

[13] T. Chen, L. Peng, X. Yin, J. Rong, J. Yang, and G. Cong, 'Analysis of User Satisfaction with Online Education Platforms in China during the COVID-19 Pandemic', *Healthcare*, vol. 8, no. 3, Art. no. 3, Sep. 2020, doi: 10.3390/healthcare8030200.

[14] J. Manullang, H. Sainan, P. Phillip, and W. Halim, 'Pengaruh Rasio Profitabilitas, Solvabilitas, dan Likuiditas terhadap Harga Saham Pada Perusahaan Sektor Pertambangan yang Terdaftar di BEI Periode 2014-2018', *Owner: Riset dan Jurnal Akuntansi*, vol. 3, no. 2, pp. 129–138, 2019.

[15] F. H. Nahar, C. Faza, and M. Azizurrohman, 'Macroeconomic Analysis and Financial Ratios on Sharia Commercial Bank Profitability: A Case Study of Indonesia', *Ihtifaz: Journal of Islamic Economics, Finance, and Banking*, vol. 3, no. 1, Art. no. 1, Jul. 2020, doi: 10.12928/ijiefb.v3i1.1721.

[16] I. A. G. D. M. Sari and I. B. P. Sedana, 'Profitability and liquidity on firm value and capital structure as intervening variable', *International research journal of management, IT and Social Sciences*, vol. 7, no. 1, pp. 116–127, 2020.

[17] M. W. M. Razali, L. Y. Ting, S. S. S. Ali, N. Abd Rahman, and J. Lunyai1&4, 'Environmental Disclosure and Stock Market Liquidity of Public Listed Firms in Malaysia', *UNIMAS Review of Accounting and Finance*, vol. 3, no. 1, pp. 56–64, 2019.

[18] T. W. P. Susanto, I. N. Sudapet, H. D. Subagyo, and J. Suyono, 'The Effect of Service Quality and Price on Customer Satisfaction and Repurchase Intention (Case Study at Crown Prince Hotel Surabaya)', *Quantitative Economics and Management Studies*, vol. 2, no. 5, pp. 288–297, 2021.

[19] D. Sugiyono, 'Metode penelitian kuatintatif, kualitatif dan R & D/Sugiyono', *Bandung: Alfabeta*, vol. 15, no. 2010, 2018.

[20] A. Z. Fajaria and N. Isnalita, 'The Effect of Profitability, Liquidity, Leverage and Firm Growth of Firm Value with its Dividend Policy as a Moderating Variable', *International Journal of Managerial Studies and Research (IJMSR)*, vol. 6, no. 10, pp. 55–69, 2018.

[21] D. Ferriswara, N. Sayidah, and E. Agus Buniarto, 'Do corporate governance, capital structure predict financial performance and firm value?(empirical study of Jakarta Islamic index)', *Cogent Business & Management*, vol. 9, no. 1, p. 2147123, Dec. 2022, doi: 10.1080/23311975.2022.2147123.

[22] A. Idris, 'Pengaruh Profitabilitas dan Solvabilitas Terhadap Nilai Perusahaan dengan Harga Saham Sebagai Variabel Mediasi pada Perusahaan Farmasi di Indonesia', *JIMF (Jurnal Ilmiah Manajemen Forkamma)*, vol. 4, no. 2, 2021.

[23] T. Adrian and H. S. Shin, 'Liquidity and leverage', *Journal of financial intermediation*, vol. 19, no. 3, pp. 418–437, 2010.

[24] M. Syafiuddin, M. Yasin, and A. B. Singandaru, 'Effect of Total Assets, Capital Expenditure, Leverage, And GRDP to the Ratio of Regional Financial Independence in Nusa Tenggara Barat Province in 2018-2022', *Socio-Economic and Humanistic Aspects for Township and Industry*, vol. 2, no. 2, Art. no. 2, May 2024, doi: 10.59535/sehati.v2i2.236.

[25] I. W. Ombuh, C. R. Opod, P. S. Mawitjere, and M. Ahmed, 'Impact of Capital Structure on Firm Performance of Financial Companies Listed on the Indonesia Stock Exchange', *Economy and Finance Enthusiastic*, vol. 2, no. 1, Art. no. 1, Jan. 2024, doi: 10.59535/efe.v2i1.204.

[26] R. R. Aulia, W. Wahyunadi, and E. Agustiani, 'The Influence of Capital Expenditures and Investment on Economic Growth in West Nusa Tenggara Province 2012-2022', *Economy and Finance Enthusiastic*, vol. 2, no. 1, Art. no. 1, Mar. 2024, doi: 10.59535/efe.v2i1.188.

[27] O. Jorg and G. Fantoni, 'A self-adaptive high precision gripper for shape variant components: Towards higher reliability and efficiency of a cobotic cell', *Journal of Manufacturing Systems*, vol. 70, pp. 113–126, Oct. 2023, doi: 10.1016/j.jmsy.2023.04.003.

[28] N. Juhandi, M. Fahlevi, M. N. Abdi, and R. Noviantoro, 'Liquidity, Firm Size and Dividend Policy to the Value of the Firm (Study in Manufacturing Sector Companies Listed on Indonesia Stock Exchange)', in *2019 International Conference on Organizational Innovation (ICOI 2019)*, Atlantis Press, 2019, pp. 313–317.

