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Analysis of The Influence of Working Capital, Liquidity and Solvency on Profitability in The Mining Industry Listed on The Indonesia Stock Exchange (Idx) For The Period 2020-2024

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ABSTRACT

This study aims to analyze the influence of working capital, liquidity, and solvency on profitability in the mining industry listed on the Indonesia Stock Exchange (IDX) for the 2020-2024 period. The research method used is a quantitative approach using secondary data in the form of annual financial statements of 25 mining companies for five years, resulting in a total sample of 125 samples. The data analysis technique used was multiple linear regression based on panel data which was analyzed using the EViews 12 application. The results of the study show that working capital (WCT) positively has no significant effect on profitability (NPM), liquidity (CR) negatively does not have a significant effect on profitability (NPM), while solvency (DAR) has a significant effect on profitability (NPM), working capital variables, liquidity and solvency have a significant effect on company profitability simultaneously. The adjusted R square value of 4.27% indicates that working capital, liquidity, and solvency together explain only a small fraction of the variation in profitability, while the rest is influenced by other factors outside of this study.

Keywords: Working Capital; Liquidity; Solvency and Profitability

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INTRODUCTION

The mining industry in Indonesia has an important role in supporting the national economy because of its contribution to state revenue and job creation. Indonesia is known as one of the countries with abundant mineral resources such as nickel, coal, petroleum, natural gas, tin, copper, and gold, so it is ranked in the top ten mining producers in the world (PT Psu, 2025) Despite its great potential, the sector is faced with challenges such as environmental, social, and regulatory issues. Therefore, a sustainable and inclusive industrial management strategy is needed. Profitability is the main indicator to assess financial performance and investor attractiveness for mining companies. Several financial factors such as working capital, liquidity, and solvency are considered to greatly affect the company's profitability.

Working capital management is essential to ensure the smooth running of daily operations, while liquidity shows the company's ability to meet short-term obligations. And Solvency describes the ability of a company to pay all its obligations. However, the results of previous research showed that the influence of these three aspects on profitability varied, depending on the company and the industry sector.

Significant changes and uncertainties, such as the impact of the Covid-19 pandemic and fluctuations in commodity prices, also affect the financial performance of mining companies in the 2020-2024 period. Therefore, this study is important to find out the extent to which working capital, liquidity, and solvency factors affect the profitability of mining companies on the Indonesia Stock Exchange, as well as provide understanding and recommendations for the management of corporate finances and investments in this sector.

This research refers to research conducted by (Adevia et al.,2024) with the title "The Effect of Liquidity, Leverage and Working Capital Turnover on Profitability with Company Size Moderation: A Case Study on Property and Housing Companies on the IDX for the 2019-2023 Period". The main difference in this study lies in the object studied, namely the mining sector on the IDX, as well as the period and solvency ratio used to be different from the previous study which focused on property and housing companies on the IDX for the 2019-2023 period and the average ratio.

LITERATURE REVIEW

According to (Mahendra & Daljono, 2023), signaling theory was proposed by Michael Spencer in 1973, who argued that by sending a signal, to the other party the information owner seeks to provide information that can be used by all parties to the receiver. Signaling theory then was developed by Stephen A. Ross in 1977. Signaling theory is a theory that explains why a company has a desire to provide financial statement information to the outside world.

Signaling *theory* can be used to predict the quality of voluntary reporting, namely by using internet media, it can be used to improve the quality of financial reporting to (Sihaloho & Sembiring 2020). The Company will provide information on the company's current state and provide signals to interested parties and future prospects of the company through the website.

The relationship between signaling theory and working capital is in providing positive signals to investors about the company's condition and future prospects. The relationship between signaling theory and liquidity according to (Febransyah & Tobing, 2023) measured by using *current rasio* (CR) is that if the liquidity level is higher, the effect of

short-term financial performance is better. The relationship between signal theory and solvency according to (Febransyah & Tobing, 2023) that the higher the solvency, the greater the ability of the company to fulfill all its obligations with its own capital. The relationship between signal theory and profitability is that high profits or revenues are good positive signals to attract investors to invest in a company.
The literature review provides a description, summary, and evaluation of each source. If necessary, the subheadings follow this format:

Working Capital
Capital is a resource or wealth owned by a company and can be used to carry out business activities and generate profits. As the discussion of working capital management deepens, further attention is shown on the administration of the company's various current assets, including cash, securities traded, receivables, and inventory, as well as the funding needed to support current assets (Zahira et al., 2024).
A company's working capital is measured using several key financial ratios related to liquidity and efficiency. The following is a reference regarding the ratio and working capital formula which refers to (Harmony, 2020) :

1. Liquidity ratio *(Current ratio),* can measure a company's ability to pay off its short-term debt with its current assets.
2. Working *capital turnover ratio,* can measure how efficiently a company uses working capital to generate sales.
3. Net working capital, used to assess the difference between current assets and current liabilities, which describes the liquid funds available for the company's operations.

Liquidity
Liquidity is the ability of a company to meet obligations that are at the time of collection and can convert assets into cash without reducing losses. according (Febransyah & Tobing, 2023). If the company is billed, the company will be able to fulfill the obligation (debt), especially the debt that has matured.

Liquidity is measured using several ratios that assess a company's ability to meet its short-term obligations with assets that are easily liquidated or generated. The following is the ratio and formula of liquidity:

1. *Current ratio* measures a company's ability to pay off short-term debt with current assets such as cash, receivables and inventory.
2. *Quick ratio*, Measures a company's ability to pay current obligations without relying on inventory, as inventory is typically more difficult and time-consuming to disburse.
3. *Cash ratio*, Measures a company's ability to pay off short-term liabilities with cash and cash equivalents (securities that are easy to sell).

Solvency
Solvency is a ratio that used to calculate a company's ability to pay off debts and finance companies and individuals using debt. In a broad sense, it is said that solvency is used to measure a company's ability to pay all its liabilities, both short-term and long-term if the company is dissolved (Syaiful, 2024). Solvency can be interpreted as a ratio that assesses the company's ability to pay off existing debts.

Solvency is measured using several ratios that compare the amount of debt or liabilities of the company with assets, capital and paying interest. The following is the ratio and formula of solvency that refers to (OCBC, 2023):

1. *Debt-to-asset ratio,* indicates how much of a company's assets are financed by liabilities or debts.

2. The debt-to-equity *ratio* shows how much a company relies on debt rather than its own capital.
3. Debt to *capital ratio,* indicating the portion of debt in the company's modeling structure. *The debt to capital ratio* is said to be good if the losses are low, which indicates that the company uses more equity than debt in its operations.
4. Profitability refers to the ability of a company to make profits or profits from its operational activities. Good or bad profitability will be a consideration for investors in buying shares, a good prospect of profitability in certain issuers will have a good impact on the company's activities in increasing the company's value in the future, this means that profitability has a strong influence on the company's value.

Profitability

Profitability refers to the ability of a company to make profits or profits from its operational activities. Good or bad profitability will be a consideration for investors in buying shares, a good prospect of profitability in certain issuers will have a good impact on the company's activities in increasing the company's value in the future, this means that profitability has a strong influence on the company's value.

Profitability is measured using several ratios that show a company's ability to generate profits from sales, assets and equity. The following is the ratio and formula:

1. *Gross profit margin* (GPM), measures the percentage of gross profit to sales revenue. Where the higher the GPM value, the better the company's operations.
2. *Net profit margin* (NPM), measures the percentage of net profit after tax against sales revenue. Demonstrate the company's overall ability to generate net profit.
3. *Return on assets* (ROA), measures net profit from the total assets owned, shows the ability to use the asset.
4. *Return on assets* (ROE), measures net profit generated from the capital invested by shareholders,

The Effect of *Working Capital Turnover* on Net *Profit Margin*

The relationship between working capital and profitability shows that the larger the working capital, the greater the company's ability to generate profits (profitability) because working capital supports operations and sales activities (Kusumawati et al., 2022). However, there are also studies that have found a positive but not significant influence, meaning that working capital does not always have a statistically significant direct impact on profitability, depending on the condition of the company and the business sector. Working capital generally has a positive impact on profitability because it supports operations and sales. From the results of the research (Febransyah & Tobing, 2023) and (Kusumawati, 2022) that working capital has a positive and significant effect on profitability. Good working capital can increase the profitability of the company, the hypotheses to be tested are:

H1: Working Capital Turnover has a positive and significant effect on Net Profit Margin

The Effect of Liquidity (*Current Ratio)* on Profitability (*Net Profit Margin*)

Some studies show that liquidity has a significant negative effect on profitability, which means that too many current assets or unproductive cash can reduce profits because the funds are not optimally invested. However, adequate liquidity remains essential to maintain operational continuity and avoid the risk of payment failure, so its impact on profitability must be balanced. From the results of the research (Cahyani & Situmorang, 2020) and (Meilia & Dwiarti., 2022) which states that liquidity has a positive and significant effect on profitability. Thus, the hypotheses to be tested are:

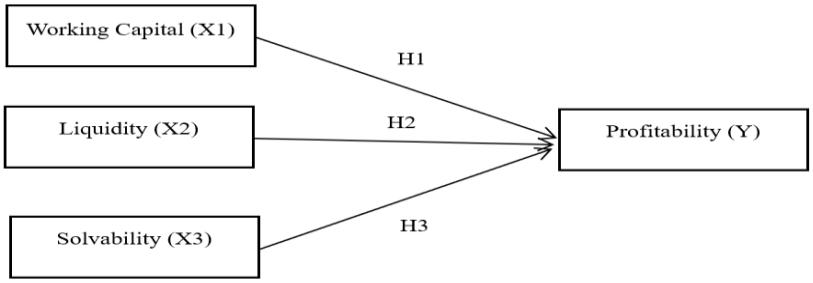
H2 : Current Ratio has a positive and significant effect on Net Profit Margin

The Effect of Debt to Asset Ratio (DAR) on Profitability (Net Profit Margin)
Optimal solvency can increase profitability through financial leverage, i.e. utilizing loan funds to increase profits but if solvency is too high, interest expense and the risk of default increase, resulting in decreased profitability. Research in various sectors shows different results, some find significant positive effects and some negative, so the influence of solvency on profitability must be analyzed according to the context of the company and its industry. The research of (Dewi & Hernawati, 2023) shows that solvency has a significant effect on profitability. While (Sormin et al., 2023) research shows that solvency has no significant effect on profitability. Thus, the hypotheses to be tested are:
H3: Debt to asset ratio has a positive and significant effect on Net Profit Margin

The effect of working capital (*Working Capital Turnover),* liquidity (*Current Ratio)* and solvency (*Debt to asset ratio)* together on profitability (*Net Profit Margin)*
It can be interpreted that when working capital, liquidity and solvency together increase, it will have an impact on increasing profitability in the company. This is supported by the results of the research (Irianti, 2021) which states that the influence between working capital, liquidity and solvency on the company's profitability has a simultaneous effect. Thus the hypotheses that will be tested are:
H4: Working Capital Turnover, Current Ratio and Debt to Asset Ratio simultaneously affect Net Profit Margin

Research Model
Based on the explanation that has been described above, a reserch model can be described below:

Figure 1. Research Model



RESEARCH METHOD

Type, Source, Population and Research Sample
This type of research is quantitative research that requires secondary data in the form of financial information. The population in this research is all mining industries listed on the Indonesia Stock Exchange for the 2020-2024 period. The technique used in the sample is purposive sampling with certain criteria (Matondang & Wuryani, 2020). The criteria for this study are:

1. Mining companies that are registered and consistent in issuing financial statements on the Indonesia Stock Exchange for the period 2020-2024.
2. Mining companies that present complete financial statements for the period 2020-2024.
3. Mining companies that have positive profits during the 2020-2024 period.
4. Mining companies that have data in complete financial statements according to research variables, namely working capital, liquidity, solvency and profitability.

Based on the sample selection using *the purposive sampling* method , the data obtained is as follows which will be tested on the *Eviwes 12 application*

Table 1 Sample Selection

No	Sample Criteria	Number of Samples
1.	Mining companies that are registered and consistent in issuing financial statements on the Indonesia Stock Exchange for the period of 2020-2024	63
2.	Mining companies that do not present complete financial statements during the 2020-2024 period	11
3.	Mining companies that do not have positive profits during the 2020-2024 period	27
4.	Mining companies that do not have data in complete financial statements according to the research variables, namely working capital, liquidity, solvency and profitability	0
	Number of Sampel	25
	Total Samples during the period 2020-2024 (25x5)	125

Source : Data processed by researchers, 2025

RESULTS

Statistics Descriptive

Table 2 Descriptive Statistics

	NPM	WCT	CR	DAR
Mean	0.227317	30.06773	2.372322	3.977254
Median	0.150000	3.772000	1.847000	2.916000
Maximum	6.597000	1467.000	10.07400	24.62400
Minimum	0.000300	0.064000	0.369000	0.368000
Std. Dev.	0.600251	173.4064	1.578379	3.030868
Skewness	9.756930	7.642146	2.210848	3.142433
Kurtosis	103.2810	60.28188	10.21061	19.13236
Jarque-Bera	54359.73	18306.37	372.6264	1561.211
Probability	0.000000	0.000000	0.000000	0.000000
Sum	28.41459	3758.467	296.5403	497.1567
Sum Sq. Dev.	44.67732	3728654.	308.9186	1139.084
Observations	125	125	125	125

Source : Processing Results Using Eviwes 12

Based on table 2, it can be seen that the amount of data in each variable is 125. This number comes from 25 samples from this study, namely mining industry companies listed on the Indonesia Stock Exchange for the period 2020-2024.It is known that NPM has a minimum value of 0.000300 and a maximum value of 6.597000, it is known that WCT has a minimum value of 0.064000 and a maximum value of 1467,000, it is known that CR has a minimum value of 0.369000 and a maximum value of 10.07400, and it is known that the DAR has a minimum value of 0.368000 and a maximum value of 24.62400.

Panel Data Regression Model Selection

There are three tests carried out to determine the estimation model of the panel data model that will then be used to manage the panel data, namely Chow test, Hausman test, and Lagrange Multiplier (LM) test. Where the Chow test is for the determination between the Common Effect Model (CEM), or Fixed Effect Model (FEM). The Hausman test is used for the determination between a Fixed Effect Model (FEM) or a Random Effect Model (REM). Meanwhile, the Lagrange Multiplier (Lm) test is used to determine between the Random Effect Model (REM) and the Random Effect Model (REM).

Table 3 Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.424160	(24,97)	0.1162
Cross-section Chi-square	37.732284	24	0.0369

Source : Processing Results Using Eviwes 12

Based on table 3, it is known that the Statistical Cross-section value of Chi-square is 37.732284 with a Probability value of 0.0369. This means that < 0.05 then statistically H1 accepts and rejects H0. In this Chow test, the model chosen is the Fixed Effect Model (FEM).

Table 3 Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.348204	3	0.5033

Source : Processing Results Using Eviwes 12

The value of the Chi-square Statistic distribution based on Table 4 is 2.348304 with a Probability value of 0.5033. This means that > 0.05 then statistically H1 is rejected and H0 is accepted. In this Hausman test, the selected model is the Random Effect Model (REM).

Table 4. LM Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.881995 (0.3477)	0.055075 (0.8145)	0.937069 (0.3330)
Honda	0.939146 (0.1738)	0.234680 (0.4072)	0.830020 (0.2033)
King-Wu	0.939146 (0.1738)	0.234680 (0.4072)	0.572235 (0.2836)
Standardized Honda	1.296392 (0.0974)	0.593350 (0.2765)	-3.001734 (0.9987)
Standardized King-Wu	1.296392 (0.0974)	0.593350 (0.2765)	-2.286586 (0.9889)
Gourieroux, et al.	--	--	0.937069 (0.3230)

Source : Processing Results Using Eviwes 12

The Breusch-Pagan Probability value based on table 4 is 0.3477. This means > 0.05. In this Lagrange Multiplier (LM) test, the selected model is the Common Effect Model (CEM).

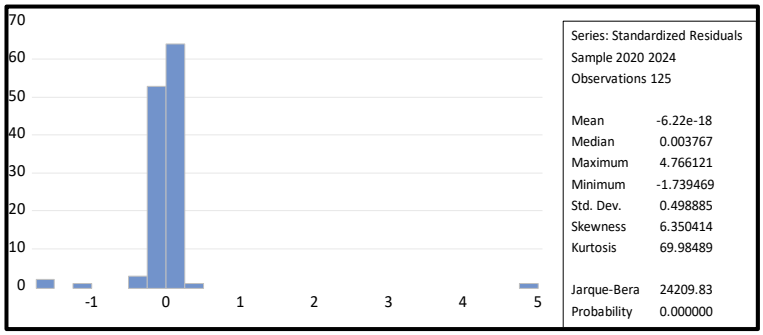
Classic Assumptions

The classic assumption test is used to assess whether the data used still contains habits or not. Some of the assumption tests discussed include normality tests, multicollinearity tests, heteroscedasticity tests and autocorrelation tests (Junita, 2025).

Normality Test

If the probability value is significant >0.05 then H0 is accepted or in other words the data is normally distributed. Conversely, if the probability value is significant <0.05 then H0 is rejected in other words the data is not normally distributed.

Figure 2 Normality Test Results

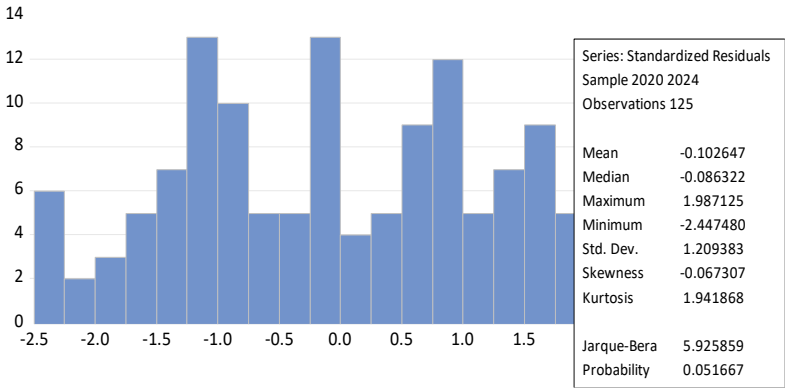


Source : Processing Results Using Eviwes 12

Based on the result, it can be seen that the correlation value between NPM and WCT is -0.015751, the correlation value between NPM and CR is 0.076457, the correlation value between NPM and DAR is 0.230059, the correlation value between WCT and CR is -0.107466, the correlation value between WCT and DAR is -0.100237, and the correlation value between CR and DAR is 0.689688. It is known that all data < 0.80. So it can be concluded that there is no problem of multicollinearity.
Thus the previous equation : npm = c + wct + cr + dar.
Now be, log(npm) = c + wct + cr + log(dar)

So that the results of the normality test statistics after the data transformation are carried out are as follows:

Figure 3. Normality Test Results After Data Transformation



Source : Processing Results Using Eviwes 12

Figure 3 shows the results of the normality test after the data transformation using logarithms on NPM dependent variables and independent variables, namely WCT, CT and DAR. Based on the image, it can be seen that the value of the Jarque-Bera Probability is 0.051667 > 0.05 so that it can be concluded that the data is normally distributed.

Heteroscedasticity Test

In this study, the test used was *Glejser*. If the output has a significant *Chi-square probability* value of p <0.05, heteroscedasticity occurs, on the other hand, if the value of p >0.05, heteroscedasticity does not occur.

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Table 5. Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022153	0.076534	0.289451	0.7729
WCT	-4.54E-05	0.000238	-0.190495	0.8493
CR	0.015944	0.046726	0.341230	0.7337
DAR	0.020693	0.029799	0.694434	0.4891
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.593079	Mean dependent var		0.140914
Adjusted R-squared	0.479813	S.D. dependent var		0.478403
S.E. of regression	0.345044	Akaike info criterion		0.904105
Sum squared resid	11.54834	Schwarz criterion		1.537647
Log likelihood	-28.50657	Hannan-Quinn criter.		1.161480
F-statistic	5.236134	Durbin-Watson stat		3.742154
Prob(F-statistic)	0.000000			

Source : Processing Results Using Eviwes 12

Based on Table 5 of the results of the heteroscedasticity test using the Glejser test, we can see that there is no heteroscedasticity problem. This is because the probability value of each independent variable < 0.05, so H0 is accepted and H1 is rejected.

Multicollinearity Test

The multicollinearity test is used to find out the correlation between independent or independent variables. If it is above 0.080, it can be a sign that multicollinearity occurs.

Table 6. Multicollinearity Test

	NPM	WCT	CR	DAR
NPM	1.000000	-0.015751	0.076457	0.230059
WCT	-0.015751	1.000000	-0.107466	-0.100237
CR	0.076457	-0.107466	1.000000	0.689688
DAR	0.230059	-0.100237	0.689688	1.000000

Source : Processing Results Using Eviwes 12

Based on Table 6, it can be seen that the correlation value between NPM and WCT is -0.015751, the correlation value between NPM and CR is 0.076457, the correlation value between NPM and DAR is 0.230059, the correlation value between WCT and CR is -0.107466, the correlation value between WCT and DAR is -0.100237, and the correlation value between CR and DAR is 0.689688. It can be seen that all data <0.80. So it can be concluded that there is no problem of multicollinearity.

Autocorrelates

Table 7 Autocorrelation Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022153	0.076534	0.289451	0.7729
WCT	-4.54E-05	0.000238	-0.190495	0.8493
CR	0.015944	0.046726	0.341230	0.7337
DAR	0.020693	0.029799	0.694434	0.4891
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.593079	Mean dependent var		0.140914
Adjusted R-squared	0.479813	S.D. dependent var		0.478403
S.E. of regression	0.345044	Akaike info criterion		0.904105
Sum squared resid	11.54834	Schwarz criterion		1.537647
Log likelihood	-28.50657	Hannan-Quinn criter.		1.161480
F-statistic	5.236134	Durbin-Watson stat		3.742154
Prob(F-statistic)	0.000000			

Source : Processing Results Using Eviwes 12

It is known that N = 125 and K (independent variable) have 3 variables, so based on table 4.10 Durbin Watson with α = 5% get the following results:
DL value = 1.6597

DUA<DW<4-DU = 1.7574 < 1.9331 < 2.2426

Therefore, it can be concluded that the data does not occur autocorrelation symptoms or pass the Autocorrelation test because the Durbin Watson Statistical value is between the DU and 4-DU values.

Multiple Regression Analysis

Table 8. Multiple Regression Analysis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102107	0.098940	1.032016	0.3041
WCT	4.56E-06	0.000306	0.014884	0.9881
CR	-0.059592	0.046212	-1.289519	0.1997
DAR	0.066992	0.024048	2.785793	0.0062

R-squared	0.065819	Mean dependent var	0.227317
Adjusted R-squared	0.042658	S.D. dependent var	0.600251
S.E. of regression	0.587309	Akaike info criterion	1.804944
Sum squared resid	41.73670	Schwarz criterion	1.895450
Log likelihood	-108.8090	Hannan-Quinn criter.	1.841712
F-statistic	2.841746	Durbin-Watson stat	1.933194
Prob(F-statistic)	0.040712		

Source : Processing Results Using Eviews 12

From Table 8, the regression equation of panel data can be seen as follows:

Profitability = 0.102017 + 4.556477WCT - 0.059592CR + 0.066992DAR

Based on this description, it can be described as follows:

1. The value of the constant with a positive value (+) is 0.102017, this shows that if the variables WCT, CR and DAR are constant, then the profitabilia is 0.102017.
2. The value of the regression coefficient of the WCT variable with a positive value (+) is 4.556477. So it can be interpreted that if the WCT (X1) variable increases, then the NPM (Y) variable will increase by 4.556477, and vice versa.
3. The value of the regression coefficient of the CR variable with a negative value (-) is - 0.059592. So it can be interpreted that the CR (X2) variable increases, then the NPM (Y) variable will decrease by - 0.059592, and vice versa.
4. The value of the regression coefficient of the DAR variable (X3) with a positive value (+) is 0.066992. So it can be interpreted that if the variable DAR (X3) increases, then the variable NPM (Y) also increases by 0.066992, and vice versa.

Coefficient of Determination Test (R2)

Determination coefficient analysis was carried out to measure how much the free variable was able to explain the change in its bound variable. The purpose of this analysis is to calculate the magnitude of the influence of the independent variable on the dependent variable, the determination value is between 0 and 1 (Rica & Saechi, 2019). A determination coefficient value close to 0 means that the ability of all independent variables to explain dependent variables is very limited, while a determination coefficient value close to 1 means that the independent variable almost provides the information described to predict changes in the variation of dependent variables.

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Table 9 Determination Coefficient Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102107	0.098940	1.032016	0.3041
WCT	4.56E-06	0.000306	0.014884	0.9881
CR	-0.059592	0.046212	-1.289519	0.1997
DAR	0.066992	0.024048	2.785793	0.0062
R-squared	0.065819	Mean dependent var		0.227317
Adjusted R-squared	0.042658	S.D. dependent var		0.600251
S.E. of regression	0.587309	Akaike info criterion		1.804944
Sum squared resid	41.73670	Schwarz criterion		1.895450
Log likelihood	-108.8090	Hannan-Quinn criter.		1.841712
F-statistic	2.841746	Durbin-Watson stat		1.933194
Prob(F-statistic)	0.040712			

Source : Processing Results Using Eviews 12

In table 4.11, it is known that the Adjusted R Square value is 0.042658. Therefore, it can be concluded that the influence of independent variables on dependent variables simultaneously (simultaneously) is 4.27%. While the remaining 95.73% was influenced by other variables outside this study.

Partial Test (T)

Table 10 Partial Test (T)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102107	0.098940	1.032016	0.3041
WCT	4.56E-06	0.000306	0.014884	0.9881
CR	-0.059592	0.046212	-1.289519	0.1997
DAR	0.066992	0.024048	2.785793	0.0062
R-squared	0.065819	Mean dependent var		0.227317
Adjusted R-squared	0.042658	S.D. dependent var		0.600251
S.E. of regression	0.587309	Akaike info criterion		1.804944
Sum squared resid	41.73670	Schwarz criterion		1.895450
Log likelihood	-108.8090	Hannan-Quinn criter.		1.841712
F-statistic	2.841746	Durbin-Watson stat		1.933194
Prob(F-statistic)	0.040712			

Source : Processing Results Using Eviews 12

Based on table 10, the results can be described as follows:

1. The WCT variable (X1) has a t-statistical value of 0.014884 with a prob value. (Significance) of 0.9881 > 0.05, then, it can be concluded that the WCT variable does not have a significant effect on the NPM (Y) variable.
2. The variable CR (X2) has a t-statistic value of -1.289519 with a prob value. (Significance) of 0.1997 > 0.05 then, it can be concluded that the CR (X2) variable does not have a significant effect on the NPM (Y) variable.
3. The variable DAR (X3) has a t-statistical value of 2.785793 with a prob value. (Significance) of 0.0062 < 0.05, then, it can be concluded that the DAR variable (X3) has a significant effect on the NPM (Y) variable.

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Table 11 Simultaneous Tests (F)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102107	0.098940	1.032016	0.3041
WCT	4.56E-06	0.000306	0.014884	0.9881
CR	-0.059592	0.046212	-1.289519	0.1997
DAR	0.066992	0.024048	2.785793	0.0062
R-squared	0.065819	Mean dependent var		0.227317
Adjusted R-squared	0.042658	S.D. dependent var		0.600251
S.E. of regression	0.587309	Akaike info criterion		1.804944
Sum squared resid	41.73670	Schwarz criterion		1.895450
Log likelihood	-108.8090	Hannan-Quinn criter.		1.841712
F-statistic	2.841746	Durbin-Watson stat		1.933194
Prob(F-statistic)	0.040712			

Source : Processing Results Using Eviews 12

It is known that the F-Statistic value is 2.841746 with a Prob value. (F-statistic) of 0.040712 < 0.05, it can be concluded that the independent variable (X) has a significant effect simultaneously (simultaneously) on the dependent variable (Y).

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DISCUSSION

Table 12 Hypothesis Testing Results

	Hipotesis	Information
H1	*Working Capital Turnover* has a positive and significant effect on *Net Profit Margin*	Not accepted
H2	*Current Ratio* has a positive and significant effect on *Net Profit Margin*	Not accepted
H3	*Debt to asset ratio* has a positive and significant effect on *Net Profit Margin*	Accepted
H4	*Working Capital Turnover*, *Current Ratio* and *Debt to Asset Ratio* simultaneously affect Net *Profit Margin*	Accepted

The Effect of Working Capital Turnover on Net Profit Margin

Based on the results of the statistical test t in table 10, the working capital variable proxied with WCT did not have a significant effect on the profitability proxied with NPM in mining industry companies on the Indonesia Stock Exchange for the 2020-2024 period. This is shown by the value of t-statistic by 0.014884 < t^{table} of 1.9794 with a prob. (significance) of 0.9881 > significance level of 0.05. This shows that the working capital variable has no effect on profitability because the value of the probability (t-statistic) > 0.05 so that hypothesis 1 is not accepted. The absence of a significant influence on this working capital variable shows that the value of each company's working capital in the 2020-2024 period tends to be stable or does not change much every year. The working capital variable (WCT) is not in line with the research conducted by (Febransyah & Tobing, 2023) and (Kusumawati et al, 2022) which states that working capital (WCT) has a positive and significant effect on profitability (NPM) good working capital can increase the company's profitability.

The results of this study, if associated with signaling theory, will reveal that the signal provided by the working capital variable does not have a significant influence of working capital on profitability, indicating that stable working capital does not produce signals of significant changes in company performance for investors during the 2020-2024 period, so that it does not affect the perception of company profitability in the mining sector on the Indonesia Stock Exchange. Signal theory is also a measure for investors to consider whether the business is worth investing in or not through the profitability generated by the business (Zahira et al., 2024)

The Effect of Current Ratio on Net Profit Margin

Based on the results of the statistical test t in table 10, the liquidity variable proxied with CR did not have a significant effect on the profitability proxied with NPM in Mining Industry companies on the Indonesia Stock Exchange for the 2020-2024 period. This is shown by the value of t-*statistic* by 1.289519 < t^{table} of 1.9794 with a prob. (significance) of 0.1997 > significance level of 0.05. This shows that the working capital variable has no effect on profitability because the value of the *probability* (t-*statistic*) > 0.05 so hypothesis 2 is not accepted. The absence of a significant influence on this liquidity variable shows that the liquidity value of each company in the 2020-2024 period tends to be stable or does not change much every year. The liquidity variable (CR) is not in line with the research conducted by the (Cahyani & Situmorang, 2020) and (Meilia & Dwiarti, 2022) which states that liquidity (CR) has a positive and significant effect on

profitability (NPM) The study shows that companies with good liquidity tend to have better profitability.
The results of this study, if associated with signaling theory, mining industry companies have provided financial signals in the form of consistent and predictable liquidity to the market. Because such liquidity signals do not show significant changes, markets and investors may pay more attention and respond to other signals that are considered more relevant in determining profitability performance, such as operational efficiency, management costs, or external macroeconomic factors. Thus, liquidity as a signal does not provide new information that affects market perception of the company's profitability during the period or can signal to investors that the company is able to meet its debts (Febransyah & Tobing, 2023) .

The Effect of *Debt to Asset Ratio* on *Net Profit Margin*
Based on the results of the statistical test t in table 10, the solvency variables proxied with DAR have a significant effect on the profitability proxied with NPM in mining industry companies on the Indonesia Stock Exchange for the 2020-2024 period. This is shown by the value of t-*statistic* by 2.785793 < t^{table} of 1.9794 with a prob. (significance) of 0.0062 < significance level of 0.05. This shows that the working capital variable affects profitability because the value of *probability* (t-*statistic*) < 0.05 until hypothesis 2 is accepted. The existence of a significant influence on this solvency variable shows that the solvency value of each company in the 2020-2024 period plays an important role in determining the company's profitability. This indicates that changes in the debt-to-total assets (DAR) structure significantly affect the company's ability to generate net profit as measured by NPM. The more efficient the company is in managing the use of debt (solvency), the more likely it is to achieve optimal profitability. The solvency variable (DAR) is in line with the research conducted by (Dewi & Hernawati, 2023) which states that solvency (DAR) has a significant effect on profitability (NPM). Therefore previous research indicates that high solvency can increase investor confidence.

The results of this study, if associated with signaling theory, the signals provided by the company's solvency structure can be understood as an important fundamental indicator for investors in assessing profitability. Investors view efficient debt management (indicated by a controlled DAR) as a good financial signal, which indicates the company's credibility and ability to generate profits, as well as maintain long-term financial stability. The relationship between signal theory and solvency according to (Febransyah & Tobing, 2023) that the higher the solvency, the greater the ability of the company to fulfill all its obligations with its own capital.

The Effect of Working Capital Turnover, Current Ratio and Debt to Asset Ratio on Net Profit Margin simultaneously

Based on the results of the statistical test F in table 11, the variables of working capital (WCT), liquidity (CR) and solvency (DAR) have a simultaneous significant effect on profitability processed with NPM in mining industry companies on the Indonesia Stock Exchange for the 2020-2024 period. Known value *F-Statistic* of 2.841746 > F table which is 2.679535 with a Prob value. (F-statistic) of 0.040712 < 0.05, then H0 is rejected and Ha is accepted, meaning that the variables WCT (X1), CR (X2) and DAR (X3) have a significant effect simultaneously (simultaneously) on the NPM (Y) variable. In H4, this is in line with the research conducted by (Irianti, 2021) which states that the influence between working capital (WCT), liquidity (CR) and solvency (DAR) on profitability (NPM) has a simultaneous effect.

The results of this study, if associated with signaling theory, show that WCT, CR, and DAR simultaneously affect profitability mean that management has given a positive signal through its financial statements to investors. High profitability as a result of optimizing working capital, liquidity, and solvency indicates that the company is able to run operations efficiently and meet short-term and long-term obligations. This efficiency

and success are fundamental signals that many investors are looking for as an indication of future investment growth prospects and security

CONCLUSION

Based on the results of the research and discussions that have been carried out previously, it can be concluded from this study that the effect of *Working Capital Turnover* (WCT), *Current Ratio* (CR) and *Debt to Asset Ratio* (DAR) on *Net Profit Margin* (NPM) in the mining industry listed on the Indonesia Stock Exchange (IDX) for the 2020-2024 period with a sample of 25 companies is as follows:

1. Working Capital Turnover (WCT) positively did not have a significant effect on the Net Profit Margin (NPM) in the mining industry listed on the Indonesia Stock Exchange for the 2020-2024 period.
2. Current Ratio (CR) does not have a significant effect on the Net Profit Margin (NPM) in the mining industry listed on the Indonesia Stock Exchange for the 2020-2024 period.
3. Debt to Asset Ratio (DAR) has a significant effect on the Net Profit Margin (NPM) in the mining industry listed on the Indonesia Stock Exchange for the 2020-2024 period.
4. Simultaneously, the Working Capital Turnover (WCT), Curren Ratio (CR), and Debt to Asset Ratio (DAR) have a significant effect on the Net Profit Margin (NPM) in the mining industry listed on the Indonesia Stock Exchange for the 2020-2024 period.

REFERENCES

Adevia, J., Rosalina, D., & Suryani, N. (2024). Pengaruh likuiditas, leverage dan perputaran modal kerja terhadap profitabilitas dengan moderasi ukuran perusahaan: Studi kasus pada perusahaan properti dan perumahan di BEI periode 2019–2023. *Postgraduate Management Journal, 4*(1), 77–91. https://doi.org/10.36352/pmj.v4i1.854

Cahyani, W., & Situmorang, J. (2020). Pengaruh efisiensi modal kerja, likuiditas, dan solvabilitas terhadap profitabilitas perusahaan farmasi. *Jurnal Online Insan Akuntan*. http://www.ejournal-binainsani.ac.id/index.php/JOIA/article/view/1194/1018

Dewi, R. A., & Hernawati, R. I. (2023). Pengaruh likuiditas, solvabilitas, dan perputaran modal kerja terhadap profitabilitas pada perusahaan yang terdaftar di Bursa Efek Indonesia. *Jurnal Mirai Management, 8*(2), 249–263. https://doi.org/10.37531/mirai.v8i2.5583

Febransyah, R., & Tobing, S. F. (2023). Pengaruh modal kerja, likuiditas dan solvabilitas terhadap profitabilitas (Studi kasus perusahaan farmasi). *Strategi, 13*(1), 16–22. https://doi.org/10.52333/strategi.v13i1.95

Harmony. (2020). *Cara hitung rasio modal kerja dan contoh lengkapnya*. https://www.harmony.co.id/blog/cara-hitung-rasio-modal-kerja-dan-contoh-lengkapnya/

Irianti, T. E. (2021). Pengaruh efisiensi modal kerja, likuiditas, dan solvabilitas terhadap profitabilitas pada perusahaan food and beverage yang terdaftar di Bursa Efek Indonesia (Periode 2012–2018). *BISECER (Business Economic Entrepreneurship), 4*(2), 1–6.

Kusumawati, D., Haerudin, H., & Santosa, E. W. A. (2022). Pengaruh likuiditas, solvabilitas dan modal kerja terhadap profitabilitas. *Value Added: Majalah Ekonomi dan Bisnis, 18*(1), 8–17. https://doi.org/10.26714/vameb.v18i1.9626

Mahendra, Y., & Daljono. (2023). Analisis pengaruh kinerja keuangan perusahaan terhadap harga saham dengan menggunakan metode Altman Z-Score (Studi empiris pada perusahaan LQ45 yang terdaftar di BEI tahun 2019–2021).

Diponegoro Journal of Accounting, 12(4), 1–14.
Matondang, F., & Wuryani, E. (2020). Pengaruh aktivitas, likuiditas dan solvabilitas terhadap profitabilitas pada perusahaan makanan dan minuman di BEI 2014–2018. *Jurnal Akuntansi dan Keuangan, 9*(9), 3403–3422.
Meilia, M., & Dwiarti, R. (2022). Pengaruh likuiditas, solvabilitas dan modal kerja terhadap profitabilitas pada perusahaan sektor industri dasar dan kimia yang terdaftar di BEI periode 2016–2020. *Artikel penelitian – tidak terdapat DOI*.
OCBC. (2023). *Pengertian rasio solvabilitas, tujuan, jenis, dan rumusnya*. https://www.ocbc.id/article/2021/08/20/rasio-solvabilitas-adalah
PT PSU. (2025). *10+ sumber daya alam tambang di Indonesia & manfaatnya*. https://psualatberat.com/sumber-daya-alam-tambang/
Rica, K., & Saechi, D. (2019). Pengaruh ukuran perusahaan, tingkat leverage dan profitabilitas terhadap pengungkapan intellectual capital (Studi empiris pada perusahaan subsektor perbankan yang terdaftar di Bursa Efek Indonesia tahun 2015–2018). *Laporan penelitian, 1–62.*
Sihaloho, M., & Parasian Sembiring, Y. C. B. (2020). Faktor–faktor yang mempengaruhi pengungkapan sukarela laporan keuangan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia tahun 2014–2017. *Jurnal Riset Akuntansi & Keuangan, 6*(1), 97–118. https://doi.org/10.54367/jrak.v6i1.854
Sormin, L. N., & Nurmadi, R. (2023). Pengaruh perputaran modal kerja, likuiditas, solvabilitas terhadap profitabilitas dengan ukuran perusahaan sebagai variabel moderasi (Studi kasus pada perusahaan properti dan real estate yang terdaftar di BEI tahun 2018–2022). *Media Informasi Penelitian Kabupaten Semarang, 5*(2), 33–45
Syaiful, A. A. A. (2024). Analisis rasio profitabilitas dan solvabilitas untuk mengukur kinerja keuangan pada PT Wijaya Karya Tbk periode 2020–2023. *Laporan penelitian – tidak terdapat DOI.*
Zahira, A., Lalu, H. H., & Siti, A. H. (2024). Pengaruh efisiensi modal kerja dan likuiditas terhadap profitabilitas pada perusahaan subsektor plastik dan kemasan yang terdaftar di BEI periode 2017–2021. *Keuangan, 2*(Maret), 1–9.

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