



## Leverage, liquidity, and working capital efficiency affect manufacturing companies' profitability on the IDX

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### ABSTRACT

The development of manufacturing companies in Indonesia is currently ongoing. However, many businesses still have profitability issues due to poor asset management. This affects a company's leverage, liquidity, and working capital. This study analyzes the role of leverage, liquidity, and working capital efficiency in influencing manufacturing companies' profitability on the Indonesian stock exchange (IDX). Quantitative research utilizing secondary data obtained from the IDX related to companies engaged in manufacturing. The total sampling technique, which included 500 companies, determined the research sample. The data were analyzed using multiple linear regression. Profitability is an essential aspect of a company's ability to obtain the expected results. Various predictors affect profitability, including leverage, liquidity, and working capital efficiency. The findings show that leverage, liquidity, and working capital effectiveness can affect profitability by 9% with a probability of 0.000 ( $p < 0.05$ ). The equation is  $Y = -2.861 + 0.459 X_1 - 0.218 X_2 + 0.304 X_3 + e$ . As a result, leverage and working capital efficiency can positively and significantly affect profitability but not liquidity.

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## INTRODUCTION

Economic progress in Indonesia cannot be separated from the participation of Indonesian industries. One Indonesian company that participates in economic development is the manufacturing company. Manufacturing companies are currently developing in Indonesia (Lumbantobing, 2020). The increased industrial production of machinery and equipment, food, pharmaceuticals, and chemical and traditional medicine products supports this growth (Ningsih, 2021). This indicates that the manufacturing industry has reasonably good business opportunities. As a profit-oriented company, profit plays a dominant role in determining whether a company will go bankrupt or survive in the industrial world. The extent of a manufacturing company's ability or effort to make a profit can be shown by the profitability level obtained in the accounting period (IDX, 2023). Given the importance of profitability for a company, it must continually improve its

work efficiency to achieve the goal expected by the company to achieve optimal profitability. Profitability can offer helpful information for evaluating the efficiency of a business's operations, and the profitability ratio demonstrates the effects of debt, asset management, and liquidity on operating performance (Kasmir, 2016).

The ability of a business to make a profit over a specific period provides an overview of the level of management activity in running operations (Shalini et al., 2022). The profitability of equity is a metric used to gauge profitability. Sudarno (2022) used ROE to assess a company's ability to generate profits from various paid-up funds. A high ROE rating indicates a company's ability to generate sufficient profits. From 2019 to 2021, the COVID-19 pandemic has also impacted Indonesia and the rest of the world (Ahmad et al., 2022). During this period, many businesses went through ups and downs in sales, and movement limitations hindered their ability to perform their daily operations. This was done to prevent the spread of COVID-19 (Adnyana & Sudaryati, 2022; Setyawan et al., 2023). A manufacturing company listed on the Indonesian stock exchange was one of the businesses affected by the COVID-19 outbreak. The profitability of the manufacturing sector, which has been under considerable strain during the pandemic, is one of the effects of the COVID-19 pandemic on the economy. The Indonesian stock exchange recorded the results of ROE as an indicator of the pandemic period, which experienced sharp fluctuations in all industrial subsectors (Bramaputra et al., 2022; Habib et al., 2022; Hidayat & Dewi, 2022).

The ROE indicator value for profitability fluctuated during the COVID-19 pandemic. In the primary materials sector, industries, and consumer cyclicals, the average ROE has experienced a sharp decline (Ahmad et al., 2022). However, in the energy, consumer, non-cyclical, and other sectors, healthcare has experienced an increase, although in a slowing position. In addition, judging by the level of ROE efficiency, only the energy and healthcare sectors obtained a favorable ROE. Thus, it can be justified that the level of profitability, as measured by the level of ROE, still shows low performance (less efficient). The low profitability of manufacturing sector companies on Indonesian stock exchanges can affect investors' decisions. Sudarno (2022) emphasizes that investors prefer companies with a high ROE value because companies with a high ROE value can generate more significant profits than companies with a low ROA value.

According to Kasmir (2016), a company's profitability is a key indicator. Knowing the variables that affect profitability is crucial for calculating profitability changes. The profit margin, total asset turnover, net income, sales, total assets, fixed assets, current assets, and total costs influence profitability. These elements have a significant effect on profitability. In addition, several factors exist, such as liquidity, capital structure, leverage, company size (Ningsih, 2021), working capital and liquidity (Falim et al., 2023), and working capital, sales growth, and liquidity (Khairunnisa & Fitria, 2023). This study considers the findings of earlier studies and concentrates on only three variables: working capital management, leverage, and liquidity.

Leverage uses assets or funds for which the company must cover fixed costs and pay fixed expenses (Fitriana et al., 2022). According to Kasmir (2016), the leverage ratio assesses the amount of debt utilized to fund a company's assets. The debt-to-asset ratio (DAR) and debt-to-equity ratio are various measures used to measure leverage. DAR is the ratio that evaluates the extent to which a company's assets are financed by debt. DAR indicates how challenging it will be for an organization to secure more debt. Although the DER compares debt to equity, the higher the DER, the riskier is the company's financial situation (Bramaputra et al., 2022). The impact of variable leverage on business profitability was also investigated. According to earlier studies by Ningsih (2021) and Sembiring et al. (2022), leverage significantly affects profitability.

Liquidity is another element that may affect profitability. Liquidity refers to a company's capacity to meet short-term obligations and debts (Kasmir, 2016). Profitability and liquidity are closely related because liquidity indicates the availability of the working capital needed for daily operations. Pradnyaswari & Dana (2022) state that the current ratio is a flexible statistic for

assessing liquidity. This current ratio (CR) illustrates how current assets can be utilized to reduce current debt or other short-term obligations. The stronger the company's ability to meet short-term obligations is, the larger the ratio of current assets to current debt (Bramaputra et al., 2022). The effect of liquidity factors on business profitability is studied. Liquidity determinants have a significant impact on profitability, according to earlier studies by Wibowo et al. (2023), Demiraj et al. (2022), and (Prabhasyahrani & Khuzaini, 2022).

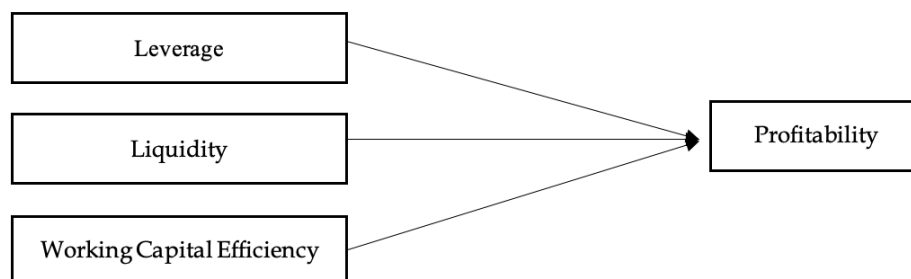
In addition to leverage and liquidity factors, working capital efficiency can affect profitability. Working capital efficiency is the regulation of short-term assets such as cash, receivables, inventory of goods, and securities, including the regulation of short-term debt (Kasmir, 2016). Working capital is also one of the most essential parts and is always required by every company. Without working capital, businesses cannot generate maximum earnings. However, their operational activities did not proceed. Working capital turnover is one anticipated variable indicator to assess working capital management. The working capital turnover period demonstrates the efficiency of the working capital utilization. The quicker the working capital is turned over, the more effectively it is used, and the lower the working capital investment (Halim et al., 2022; Mufti et al., 2023; Soda et al., 2022). The impact of the working capital management variables on business profitability was studied. According to past studies by Rahmi & Zulfitra (2022), Halim et al. (2022), and Prasetia et al. (2022), working capital management factors have a considerable impact on profitability. However, until now, reports related to leverage variables, liquidity, and working capital efficiency affecting the profitability of a company have not been widely reported, so it is important to identify this, especially in manufacturing companies.

Considering the information collected, it is essential to conduct a predisposition evaluation that affects the profitability of manufacturing companies in Indonesia. This study analyzes the role of leverage, liquidity, and working capital efficiency in influencing manufacturing companies' profitability on the Indonesian Stock Exchange (IDX). It is hoped that this research will provide information related to predispositions that affect company profitability, to be used as evaluation material for related companies. The expected practical and theoretical implications of this study are that studying the variables of leverage, liquidity, and working capital efficiency in manufacturing companies is essential for optimizing profitability, managing financial risks, and making informed strategic decisions. This enables companies to adapt to changing market conditions and regulatory requirements, ultimately contributing to long-term success and sustainability.

## RESEARCH METHOD

### Research Framework

They used secondary information on manufacturing companies from the Indonesia Stock Exchange (IDX) for quantitative research (Darwin et al., 2021). A total of 500 manufacturing businesses from the IDX database were used as research samples. Sample determination was performed using total sampling (Adnyana, 2021). This study evaluates the influence of leverage, liquidity, and working capital efficiency on the profitability of manufacturing companies under the IDX. Leverage ( $X_1$ ), liquidity ( $X_2$ ), and working capital efficiency ( $X_3$ ) are the three independently examined variables. Profitability, as determined by the return on assets (ROA), is a dependent variable. The research model is illustrated in Figure 1.



**Figure 1.** Research model framework

The data obtained in this study were statistically analyzed using multiple linear regression, starting with descriptive statistical testing and testing data normality with one-sample Kolmogorov–Smirnov test criteria of  $\geq 0.05$ . Multicollinearity testing was carried out with tolerance value criteria  $> 0.10$  and variance inflation factor (VIF)  $< 10$ , and heteroscedasticity testing was carried out using the Glacier test with  $\geq$  criteria of 0.05 (Adnyana, 2021). The viability of the model was assessed by analyzing the coefficient of determination ( $R^2$ ), F-test, and t-test with a 95% confidence level ( $p < 0.05$ ) (Paulus et al., 2023).

### Development of Hypotheses

#### **Leverage affects the profitability of manufacturing enterprises**

A ratio called leverage compares the total debt to equity. This ratio represents the amount of money creditors loan to business owners. In other words, this ratio demonstrates the extent to which an owner's capital is pledged as debt security. Leverage demonstrates how effectively a business uses resources to boost capital and earnings (Ningsih 2021). Leverage represents the amount of debt employed to fund investments. The higher the DER ratio, the more confident investors are that the company can make the most use of capital to develop itself (Kim et al., 2023; Munandar et al., 2019; Sandra Dewi, 2020). This is likely to increase a company's financial profitability because with significant capital, the opportunity to achieve a profit level is also significant. In addition, investors develop a sense of security when investing in capital. They invest more in the company so that it can further increase its capital development to obtain maximum profit. Hidayat & Dewi (2022) and Falim et al. (2023), The research findings also support the assertion that liquidity contributes to profitability.

$H_1$ : Leverage positively affects the profitability of manufacturing companies.

#### **Deep liquidity affects the profitability of manufacturing companies**

A company's liquidity is its capacity to pay for short-term obligations when maturing. "liquidity" refers to a business's general financial standing or ease of paying its debts. In addition to profitability being important for businesses, liquidity management is also essential for all small, medium, and large businesses to pay short-term debts without difficulty by collecting money from customers on time (Khairunnisa & Fitria, 2023; Sandra Dewi, 2020). If a company does not care about profits, it cannot survive longer, whereas if it does not care about liquidity, it will experience incompetence or bankruptcy. Companies are more willing to provide more information through financial statements when they have a high degree of liquidity, indicating better muscular financial health. The research results by Pradnyaswari & Dana (2022) stated that liquidity positively influences profitability. This indicates that companies must convert certain current assets into cash to pay their current obligations because, as interested parties assess the company's liquidity level, high or low liquidity, measured using the current ratio, increases profitability. This aligns with the

results of Pradnyaswari & Dana (2022) and Ehiedu & Priscilla (2022), who state that liquidity positively affects profitability.

H<sub>2</sub>: Liquidity positively affects the profitability of manufacturing companies.

### **Working capital efficiency affects manufacturing companies' profitability**

A company's ability to effectively utilize its current working capital to boost prosperity is demonstrated by its effective utilization of working capital. The goal of efficient working capital management is to align the available working capital with the operational requirements of the business, ensuring that it is neither excessive nor deficient. Working capital efficiency also shows management's achievements in managing company resources because the more efficient the working capital, the better the company's performance (Munandar et al., 2019). Working capital efficiency is an indicator of the adequate management of working capital. Working capital turnover is a common method to gauge how efficiently working capital is used. A higher turnover indicates that the money or cash invested in working capital is converted into cash more quickly. This means that a company's profits can be received more quickly. Companies that cannot calculate a satisfactory level of working capital may experience insolvency (inability to meet maturing obligations) and may even be forced to liquidate ties. According to Pradnyaswari and Dana (2022), who claim that working capital efficiency has a positive impact on profitability, working capital should be available in sufficient quantities to enable the company to operate profitably, avoid financial difficulties by covering losses, and overcome critical or emergency circumstances without jeopardizing the company's financial situation.

H<sub>3</sub>: Working capital efficiency positively affects profitability.

## **RESULTS AND DISCUSSIONS**

### **Descriptive Statistics**

Based on the analysis findings, the leverage represented by DER ( $X_1$ ) has a standard deviation of 40.89693, a minimum value of -875.39, a maximum value of 98.79, an average value of -0.6105, and a minimum value of -875.39. The current ratio ( $X_2$ ), which serves as a proxy for liquidity, ranges from 0.01 to 2973.15, with an average of 10.5212 and standard deviation of 134.38101. WCT ( $X_3$ ), a proxy for working capital efficiency, has a range of -2931.32 to 38.32, an average of -4.1968, and a standard deviation of 131.24103. The ROA ( $Y$ )-proxied profitability value ranges from -5.5 to 4.35, with an average value of 0.0233 and a standard deviation of 0.35517. Table 1 displays the results of the descriptive statistical analyses.

**Table 1.** Descriptive statistical

Descriptive Statistics					
Indicators	N	Minimum	Maximum	Mean	Std. Deviation
ROA ( $X_1$ )	500	-5,55	4,35	0,0233	0,35517
CR ( $X_2$ )	500	0,01	2973,15	10,5212	134,38101
DER ( $X_3$ )	500	-875,39	98,79	-0,6105	40,89693
WCT ( $Y$ )	500	-2931,32	38,32	-4,1968	131,24103

### **Classical assumption testing**

A data normality test was used to determine whether the data were normally distributed. The results of the normality test were based on significance values. If the significance value was less than 0.05, the data were considered not normally distributed, whereas if the significance value was greater than 0.05, the data were considered normally distributed. The results of the normalcy test show an asymptote. sig (2-tailed) values of 0.200 ( $p > 0.05$ ) indicate a regularly distributed distribution of the data. Table 2 shows the results of the normality test.

**Table 2.** Normality testing

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		316
Normal Parameters <sup>a,b</sup>	Mean	0,0000000
	Std. Deviation	0,91847032
Most Extreme Differences	Absolute	0,043
	Positive	0,027
	Negative	-0,043
Test Statistics		0,043
Asymp. Sig. (2-tailed)		0.200 <sup>c,d</sup>

Furthermore, a DER ( $X_1$ ) of 0.172 with a VIF value of 3.889 is a proxy for leverage. The current ratio ( $X_2$ ) of 0.277, with a VIF value of 3.026, approximates the liquidity variable tolerance value. The tolerance value of the working capital efficiency variable was 0.640, with a VIF value of 1.449 ( $X_3$ ). There were no signs of multicollinearity because the tolerance value was more significant than 0.1, and the VIF was not greater than 10. Table 3 lists the outcomes of the multicollinearity tests.

**Table 3.** Multicollinearity Testing

Type	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
LnDER ( $X_1$ )	0,172	3,026
LnCR ( $X_2$ )	0,277	3,889
LnWCT ( $X_3$ )	0,640	1,562

Heteroscedasticity is a systematic change in the spread of residues over a measured range of values. Heteroscedasticity is a problem because ordinary least squares (OLS) regression assumes that all residues are taken from a population that has constant variance (homoscedasticity). In this study, all variable significance values for heteroscedasticity using the glacier test were above 0.05, indicating that the heteroscedasticity symptoms shown in Table 4 did not exist.

**Table 4.** Heteroscedasticity Testing

Type	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0,482	0,140		3,440	0,0010
LnDER ( $X_1$ )	0,181	0,110	0,343	1,637	0,1030
LnCR ( $X_2$ )	0,302	0,171	0,359	1,768	0,0780
LnWCT ( $X_3$ )	-0,025	0,038	-0,045	-0,645	0,5190

### Model Feasibility Evaluation

The feasibility test findings of the model were used to calculate an adjusted R-squared value of 0.090. This suggests that 9 percent of profitability can be impacted by factors such as leverage, liquidity, and working capital efficiency. In comparison, the other 91 percent were influenced by factors not considered in this study. The F-test resulted in a value of 11.442 with a significance level of 0.000 ( $p < 0.05$ ), demonstrating the applicability of the study model. As a consequence of calculating all possible values for each variable, the equation  $Y = -2.861 + 0.459 X_1 - 0.218 X_2 + 0.304 X_3 + e$  was created. According to this equation, a) the constant value of -2.861 indicates that profitability will be predicted to lose 2.861 if the independent variable is equal to zero; b) the value of the regression coefficient of the leverage variable is proxied with a DER of 0.459 with a positive value, indicating that for every increase in DER by 1 unit, profitability will

increase by 0.459 assuming the other variables are constant; and c) the value of the regression coefficient of the leverage variable is Table 5 displays the findings of the model feasibility assessment.

**Table 5.** Results of model feasibility evaluation with multiple linear regression

Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std. Error	Beta		
(Constant)	-2,861	0,227		-12,596	0,000
LnDER (X <sub>1</sub> )	0,459	0,179	0,514	2,564	0,011
LnCR (X <sub>2</sub> )	-0,218	0,277	-0,153	-0,789	0,431
LnWCT (X <sub>3</sub> )	0,304	0,062	0,330	4,918	0,000
R					0,315
R Square					0,099
Adjusted R Square					0,090
Test F					11,442
Sig. Model					0,000

## Hypothesis Evaluation

### Leverage in affecting profitability

Leverage has a positive influence of 0.459 with a significance level of 0.011 ( $p < 0.05$ ), according to the findings of hypothesis testing with the t-test; therefore, it can be stated that the first hypothesis in this study may be supported. According to the analysis findings, leverage significantly affects the profitability of manufacturing companies listed on the IDX in 2022. This implies that the issuer will be more profitable and have higher leverage. High leverage suggests that the issuer has a sizable source of funding in the form of investments used to support the issuer's assets, which are projected to boost the issuer's profits instead of simply utilizing its capital, which is more constrained. If the issuer's assets are managed properly and maximally, the profits obtained will also be maximized. This is because the issuer uses their assets for operational activities, which are expected to increase profitability. Increasing revenue certainly positively impacts issuers because they can obtain optimal profits using debt. The findings of this study are consistent with those of Wibowo et al. (2023), who found that leverage significantly increases profitability.

### Deep liquidity affects profitability

It can be concluded that the second hypothesis in this study cannot be supported based on the results of the analysis of the second hypothesis, which showed that liquidity had an adverse effect of 0.218 with a significance level of 0.431 ( $p > 0.05$ ), and H2 was rejected. The findings of this investigation can be explained by the fact that the profitability of manufacturing issuers listed on IDX 2022 is negatively and negligibly impacted by liquidity. This finding demonstrates that the second hypothesis was unsupported. The corporation has not managed its liquidity level well, as seen by the fact that rising liquidity, as measured by CR, lowers profitability levels. The current ratio demonstrates a business's capacity to service its current liabilities with its current assets. A high current ratio indicates excessive idle current assets. As a result, the company's profitability suffers because current assets yield lower returns than fixed assets. The findings of this study concur with those of Suryani et al. (2022) and Fitriana et al. (2022), who find that liquidity has a detrimental and negligible impact on profitability.

### Working capital efficiency in influencing profitability

The third hypothesis in this study can be validated according to the findings of testing it, as working capital efficiency has a positive influence of 0.304 with a significance level of 0.000 ( $p < 0.05$ ), and H3 is accepted. The results demonstrate that the third hypothesis is valid, with the

effectiveness of working capital having a considerable beneficial impact on the profitability of manufacturing issuers listed on the IDX in 2022. Manufacturing issuers are more profitable when their working capital turnovers are higher. One of the ratios used to gauge or evaluate a company's working capital efficacy during a specific period is working capital turnover, also known as efficiency. That is, how much of the company's working capital has rotated over time? A business with rapid capital turnover has high sales. Investment in inventory and receivables increases with sales volume. Additionally, the business constantly requires working capital to cover operational expenses. The findings of this study are consistent with those of Mazanec (2022), Mandipa & Sibindi (2022), and Munandar et al. (2019), who find that working capital efficiency significantly increases profitability.

### Limitations and Novelty of Research

This study has limitations connected to the unit of analysis, which only focuses on manufacturing companies listed on the IDX. Consequently, it has not produced diverse results, especially if the analysis is conducted on other companies. Nevertheless, this study provides new insights into how leverage, liquidity, and working capital efficiency influence profitability.

## CONCLUSION

Profitability is an essential aspect of a company's ability to obtain the expected results. Various predictors affect profitability, including leverage, liquidity, and working capital efficiency. The findings of this study show that leverage and working capital efficiency, but not liquidity, can positively and significantly affect profitability. Through this research, manufacturing companies can focus on the components of leverage, liquidity, and working capital efficiency to increase company profitability. A thorough evaluation is required to produce achievements, as announced by the company. Studying the variables of leverage, liquidity, and working capital efficiency and their impact on profitability in manufacturing companies is crucial to understanding and managing the financial health and sustainability of these businesses. Further research is needed to identify other predictors that can increase profitability in an agency, particularly in manufacturing companies.

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