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The Effect of Profitability, Liquidity, Solvency, and Free Cash Flow on The Value of Manufacturing Companies in Indonesia

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Abstract

This study aims to analyze the effect of profitability (Return on Assets/ROA), liquidity (Current Ratio/CR), solvency (Debt to Equity Ratio/DER), and free cash flow (FCF) on firm value in manufacturing companies in the consumer goods sector listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. Firm value is proxied by Price-to-Book Value (PBV). This study uses a quantitative approach with secondary data from companies' annual financial statements. The research sample was selected using purposive sampling, resulting in 27 companies observed over five years and a total of 135 observations. The analysis used multiple linear regression, preceded by classical assumption tests. The results show that, partially, profitability (ROA), liquidity (CR), and free cash flow (FCF) have a positive and significant effect on firm value. Meanwhile, solvency (DER) does not significantly affect firm value. Together, ROA, CR, DER, and FCF significantly affect firm value. The adjusted R^2 indicates that the independent variables explain 52.4% of the variation in firm value, while the remaining 47.6% is influenced by factors outside the research model. These findings indicate that investors place greater emphasis on a company's ability to generate profits, maintain liquidity, and generate free cash flow rather than on its capital structure.

Keywords: Profitability; Liquidity; Solvency; Free Cash Flow; Firm Value.

JEL Codes: G30, G32, M41

1. Introduction

Manufacturing is the process of transforming raw materials into finished goods with market value through several stages of production, aided by adequate machinery and carried out on a mass scale. Since the Industrial Revolution in the 18th century, the manufacturing sector has become a mainstay of economic development in many countries, including Indonesia. Initially, manufacturing was simple and manual, but technological advances have made the production process increasingly automated, efficient, and complex, incorporating innovations such as automation, robotics, and artificial intelligence, as reported by Liputan 6 and RRI in 2024. The development of Indonesia's manufacturing industry began to grow rapidly during the industrialization era in the 1970s. The government has encouraged the growth of this sector through the development of industrial zones, the provision of infrastructure, and investment policies. Entering the 21st century, Indonesia's manufacturing sector in Indonesia has not only focused on natural resource-based products, such as textiles, food and beverages, and

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agricultural processing, but has also begun to develop medium- to high-tech sectors, such as automotive, electronics, and pharmaceuticals (Paramudita et al., 2024). Indonesia has great potential to become a developed nation, and one hallmark of a developed nation is the significant role and contribution of the manufacturing sector. In 2023, Indonesia's manufacturing industry ranked 10th, South Korea 6th, and China 1st worldwide. The growth of Indonesia's manufacturing sector can be seen in its contribution to the national Gross Domestic (GDP). In 2024, the manufacturing sector contributed 18.98% to Indonesia's GDP, up from 18.67% in 2023 and 18.34% in 2022. As of 2023, Indonesia had approximately 32,193 medium- and large-scale manufacturing companies spanning various sectors such as food and beverages, textiles, metals, chemicals, pharmaceuticals, and transportation equipment. Industrial zones in West Java, Central Java, and East Java, as well as new industrial zones outside Java such as Batam, Sulawesi, and Kalimantan, continue to expand to support the growth of the manufacturing sector.

As a result of advances in technology, competition among manufacturing companies has become increasingly fierce. Every company is making rapid progress in order to become the best by increasing its corporate value, which is often linked to its stock price. This progress is expected to attract investors to invest their capital; therefore, stock market analysis particularly on the stock exchange for companies in the consumer goods manufacturing sector requires investors to examine in greater detail which financial ratios and indicators influence corporate value. Investors can consider various factors when investing their capital, such as annual profit growth. The first is the company's profitability ratio (ROA), which can be used to track manufacturing companies' performance in each reporting period. This ratio indicates the company's ability to generate profits relative to revenue, assets, or equity. The second indicator is liquidity, or the current ratio. Liquidity measures a company's ability to pay short-term debts as they become due. The higher this ratio, the better the company's ability to meet its short-term debt obligations, the current ratio is used to assess a company's ability to meet its short-term obligations in business. The third indicator is the debt-to-equity ratio. This ratio indicates how much of the company's total available capital can be used to repay its debts, as stated by Kasmir (2018), that the debt-to-equity ratio is the comparison between a company's equity and its total debt. The final indicator is Free Cash Flow, defined as the net cash available to the company after deducting capital expenditures and working capital requirements (Fatmala, 2020). The objective of this study is to determine whether the four independent variables ROA, CR, DER, and FIF have an impact on company value. It is hoped that this study will provide crucial insights for company managers and investors regarding the factors that influence a company's value when making decisions to invest in stocks within the context of the manufacturing industry in Indonesia, and that the results of this study can be used as a basis for consideration in investment decision-making, with an emphasis on financial indicators such as profitability, liquidity, and free cash flow ratios to measure the value of manufacturing companies in the consumer goods sector in particular.

2. Literature review

2.1 Signaling Theory

Signaling Theory explains how company management conveys information to external parties, particularly investors, through specific policies or actions in order to reduce information asymmetry. This theory was first introduced by Spence (1973), who stated that parties with more information (insiders) can send signals to parties with less information (outsiders). This theory states that companies send signals to investors in the form of financial indicators such

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as profitability, cash flow, and capital structure. Strong signals, such as increased profits or improved cash flow efficiency, are perceived as indications of good performance, thereby increasing the company's value in investors' eyes.

2.2 Profitability (ROA)

Profitability describes a company's ability to generate profits from its operating activities. Return on Assets (ROA) is a commonly used indicator to measure how efficiently a company utilizes its assets to generate profits. This ratio is calculated by dividing net income after taxes by total assets (Chrisnando et al., 2024). Research by Ristiani & Sudarsi (2022);Nofriyani et al. (2021) shows that ROA has a significant positive effect on corporate value. This means that the higher the ROA, the better investors perceive the company's performance, thereby increasing the company's value. Profitability is a ratio used to assess a company's ability to generate profits. This ratio also measures the effectiveness of a company's management. In addition, it provides an overview of the level of management effectiveness in carrying out its operations. Management effectiveness here is viewed in terms of the profit generated relative to the company's sales and investments (Supandi & Goenawan, 2023).

2.3 Liquidity (Current Ratio)

Liquidity indicates a company's ability to meet its short-term obligations. One of the most commonly used liquidity measures is the Current Ratio (CR), the ratio of current assets to current liabilities. A high CR indicates that the company has sufficient resources to meet its short-term debts (Prasetyo & Isbanah, 2023). Research conducted by Rinofah et al. (2022) shows that liquidity has an effect on firm value, although the results vary between significant and nonsignificant depending on the industry sector.

2.4 Solvency (DER)

Solvency reflects a company's ability to meet its long-term obligations. The Debt-to-Equity Ratio (DER) is used to measure the extent to which a company is financed by debt relative to its equity. A DER that is too high can send a negative signal to investors because it increases the company's financial risk (Evani et al., 2022). Research by Komala et al. (2021);Ristiani & Sudarsi (2022) indicates that the DER has a variable effect on firm value. A high DER can reduce firm value due to higher interest expenses and increased bankruptcy risk.

2.5 Free Cash Flow

A company's cash flow, or free cash flow, which remains after deducting capital expenditures and investments (Fatmala & Riharjo, 2021). Free cash flow is the cash flow a company can use for additional investments, debt repayment, share buybacks, or to increase the company's liquidity. Thus, companies with high free cash flow are viewed by the public as better able to survive when faced with difficult conditions, provided that it is used wisely, appropriately, and with careful consideration (Kieso et al., 2020).

2.6 Firm Value

Firm value represents investors' perceptions of a company's fair value. It can be proxied using metrics such as Tobin's Q or the Price-to-Book Value (PBV) ratio. According to Ristiani & Sudarsi (2022), a high firm value indicates that a company is in a healthy condition and possesses favorable long-term prospects. Firm value reflects management's success in enhancing shareholder wealth and shows the extent to which the capital market values the company.

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3. Methodology

3.1 Research Design

This study employs a causal-comparative research design to analyze the behavior of several variables and the relationships among them. The variables in this study consist of four independent variables: Profitability, measured using Return on Assets (ROA); Liquidity, measured using the Current Ratio (CR); Solvency, measured using the Debt-to-Equity Ratio (DER); and Free Cash Flow (FCF). The dependent variable is Firm Value, measured using the Price-to-Book Value (PBV) ratio.

3.2 Type and Data Sources

The type of data used in this study is quantitative data. The ratio data were obtained from the Indonesia Stock Exchange (IDX) website for manufacturing companies and the respective websites of the relevant companies, using the companies' annual financial reports for the years 2020–2024. This study used secondary data, sourced from the official websites of the relevant manufacturing companies and the Indonesia Stock Exchange.

3.3 Population, Sample, and Sampling Technique

The population used in this study consists of manufacturing companies listed on the Indonesia Stock Exchange from 2020 to 2024. This study used a purposive sampling method from among manufacturing companies listed on the Indonesia Stock Exchange, comprising 27 companies over a 5-year period, resulting in a total of 135 data points. The criteria for selecting the sample data in this study were: manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period; companies that published annual financial reports for the 2020–2024 period consecutively; companies with complete financial report data related to all variables in this study , companies with a positive ROA during the 2020–2024 period, companies with complete stock price data for PBV calculations; and companies with positive Free Cash Flow (FCF) during the study period. The data analysis method used was descriptive analysis, along with classical assumption tests, including tests for normality, multicollinearity, autocorrelation, and heteroscedasticity. Then, hypothesis testing was conducted, including the partial test (t), the simultaneous test (F), and the coefficient of determination test (adjusted R^2 test). This study used multiple regression analysis to measure the strength of relationships among two or more variables and to indicate the direction of the relationship between the dependent and independent variables. The regression equation used for this study is as follows:

$$PBV = \alpha + \beta_1 ROA + \beta_2 CR + B_3 DER + B_4 FCF + \varepsilon$$

Notes:

α = Constant
β = Regression coefficient
ROA = Return on Assets (Profitability)
CR = Current Ratio (Liquidity)
DER = Debt-to-Equity Rasio (Solvency)
FCF = Free Cash Flow
PBV = Price-to-Book Value (Firm Value)
ε = error term

4. Results and Discussion

4.1. Descriptive Statistics Results

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Table 1. Results of Descriptive Statistical Tests

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	135	0.008	0.332	0.096	0.059
CR	135	0.738	13.396	3.003	2.258
DER	135	0.072	4.935	0.798	0.752
FCF	135	-0.085	0.645	0.122	0.110
PBV	135	0.002	17.979	2.537	2.835

Source: Processed data (2025)

Based on the results of a descriptive statistical analysis of 135 observations, this study covers five variables: Return on Assets (ROA), Current Ratio (CR), Debt-to-Equity Ratio (DER), Free Cash Flow (FCF), and Price-to-Book Value (PBV). Descriptive statistics were used to provide an overview of the research data characteristics through the minimum, maximum, mean, and standard deviation of each variable. The Return on Assets (ROA) variable had a minimum value of 0.008 and a maximum value of 0.332, with a mean of 0.096 and a standard deviation of 0.059. These results indicate that the average ROA of the companies in the research sample is 9.6%, which reflects the companies' ability to generate profits from their total assets. A standard deviation lower than the mean indicates that ROA varies relatively little across observations compared to the mean. The Current Ratio (CR) variable ranges from 0.738 to 13.396. The average CR value is 3.003 with a standard deviation of 2.258. This indicates that, on average, companies have current assets approximately 3.003 times their current liabilities. This condition generally indicates the companies' ability to meet their short-term obligations. However, the relatively large standard deviation indicates a relatively high degree of variation in liquidity levels across companies or observation periods. A very high CR value may also reflect current assets that have not been optimally utilized, necessitating further analysis based on each company's specific circumstances. The Debt-to-Equity Ratio (DER) ranges from 0.072 to 4.935. The average DER is 0.798 with a standard deviation of 0.752. These findings indicate that, on average, companies have total debt amounting to approximately 0.798 times their total equity. Thus, on average, the proportion of a company's debt is lower than its equity. Nevertheless, the maximum value of 4.935 indicates that there are observations with relatively high leverage levels. A standard deviation close to the mean also indicates significant variation in the financing structure within the study sample. The Free Cash Flow (FCF) variable has a minimum value of -0.085 and a maximum of 0.645, with a mean of 0.122 and a standard deviation of 0.110. A negative minimum value indicates that, for certain observations, the company's free cash flow is negative. This condition can occur when operating cash flow, after being reduced by capital expenditures, has not yet generated positive free cash flow. Meanwhile, the mean value of 0.122 indicates that, in general, FCF in the research sample is positive. A standard deviation that is slightly lower than the mean indicates variation in FCF across observations, but the spread is relatively more limited compared to variables with a standard deviation greater than their mean. The Price-to-Book Value (PBV) variable has a minimum value of 0.002 and a maximum of 17.979. The average PBV is 2.537 with a standard deviation of 2.835. These results show that, on average, a company's market price is approximately 2.537 times its book value per share. Generally, a PBV above one may indicate that the market assigns a higher valuation than the company's book value of equity. However, a standard deviation greater than the mean value indicates that the PBV has a fairly high dispersion. This suggests significant differences in market valuation across companies or observation periods, which may be related to growth expectations, profit prospects, and

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investor perceptions of the companies.

4.2. Classical Assumption Tests

Before testing hypotheses using multiple linear regression analysis, classical assumption tests are first conducted. Classical assumption tests aim to ensure that the regression model used meets the basic statistical assumptions, so that the resulting regression estimates are valid, unbiased, and reliable. In this study, the classical assumption tests include the normality test, the multicollinearity test, the heteroscedasticity test, and the autocorrelation test.

4.2.1. Normality Test

The normality test is conducted to determine whether the residual data in the regression model are normally distributed or not. A normal distribution of the residuals is one of the key assumptions in multiple linear regression analysis, as a violation of this assumption can lead to less valid estimation results. In this study, the normality test was performed using the Kolmogorov–Smirnov (K–S) test with a significance level of 0.05. If the K–S test results show a significance value (Asymptotic Sig., 2-tailed) greater than 0.05, it can be concluded that the residual data are normally distributed. The following are the results of the normality test in this study:

Table 2. Normality Test Results

				Unstandardized Residual
N				135
Normal Parameters[a,b]	Mean			.0000000
	Std. Deviation			1.92762688
Most Extreme Differences	Absolute			.102
	Positive			.102
	Negative			-.079
Test Statistic				.102
Asymp. Sig. (2-tailed)				.001[c]
Monte Carlo Sig. (2-tailed)	Sig.			.110[d]
	99% Confidence Interval		Lower Bound	.102
			Upper Bound	.118

Source: Processed data (2025)

Based on the results of the Kolmogorov–Smirnov normality test, the Asymp. Sig. (2-tailed) value was 0.001 and the Monte Carlo Sig. (2-tailed) value of 0.110. An Asymp. Sig. value less than 0.05 indicates that, asymptotically, the data are not normally distributed. However, the results of the Monte Carlo test show a significance value of 0.110, which is greater than 0.05; therefore, it can be concluded that the data are normally distributed. Given that the Kolmogorov–Smirnov test is sensitive to large sample sizes, the Monte Carlo results are considered more representative for the conditions of this study's data. Thus, it can be concluded that the residual data are normally distributed and satisfy the normality assumption required in linear regression analysis.

4.2.2. Multicollinearity Test

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The multicollinearity test examines correlations among independent variables using Tolerance and Variance Inflation Factor (VIF). A regression model is considered free from multicollinearity if the Tolerance value is > 0.10 and the VIF value is < 10. The following presents the multicollinearity test results of this study:

Table 3. Multicollinearity Test Results

Independent Variables	VIF	Tolerance	Decsription
ROA	1.584	0.631	No indication of multicollinearity
CR	1.361	0.735	No indication of multicollinearity
DER	1.386	0.722	No indication of multicollinearity
FCF	1.512	0.661	No indication of multicollinearity

Source: Processed data (2025)

Based on the results of the multicollinearity test presented in Table 3, it is evident that all independent variables in the regression model have Tolerance values above 0.10 and Variance Inflation Factor (VIF) values below 10. The profitability variable (ROA) has a Tolerance value of 0.631 with a VIF of 1.584; the liquidity variable (Current Ratio) has a Tolerance value of 0.735 with a VIF of 1.361; the solvency variable (Debt-to-Equity Ratio) has a Tolerance value of 0.722 and a VIF value of 1.386, and the free cash flow (FCF) variable has a Tolerance value of 0.661 with a VIF value of 1.512. Tolerance values greater than 0.10 and VIF values less than 10 for all independent variables indicate that there is no high correlation among the independent variables in the regression model. Thus, it can be concluded that the regression model used in this study is free from multicollinearity. This indicates that each independent variable namely, ROA, current ratio, DER, and free cash flow has a unique explanatory power regarding firm value (PBV) without excessive influence among the independent variables.

4.2.3. Autocorrelation Test

An autocorrelation test is used to determine whether the residuals in a regression model are correlated across observations. The test is conducted using the Durbin–Watson (DW) test, where the DW value ranges from 0 to 4. A regression model is considered free of autocorrelation if the Durbin–Watson value is greater than the upper limit (du) and less than (4 – du). Thus, the closer the value is to the midpoint (2), the more the regression model is considered to satisfy the assumption of residual independence. The following are the results of the autocorrelation test in this study:

Table 4. Autocorrelation Test Results

DW Score	DUA Score	(4-DU)	Decsription
1.915	1.7802	2.2198	No indication of autocorrelation

Source: Processed data (2025)

Based on the results of the autocorrelation test presented in Table 4, the test using the Durbin–Watson (DW) method yielded a DW value of 1.915. Meanwhile, the upper limit (DU) was 1.7802 and the (4 − DU) is 2.2198. The decision criteria state that the regression model is considered free of autocorrelation if the Durbin–Watson value lies between DU and (4 − DU). The test results show that the Durbin–Watson value falls within the range 1.7802 < 1.915 < 2.2198. Thus, it can be concluded that the regression model in this study is free from autocorrelation. This indicates that there is no relationship or correlation between the residuals

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of one observation and those of another, meaning that the assumption of residual independence has been met. Therefore, the regression model used is deemed suitable for further regression analysis.

4.2.4. Heteroscedasticity Test

The heteroscedasticity test was conducted using the Glejser test by regressing the absolute residuals against the independent variables. If the significance value (Sig.) of each variable is > 0.05, the model is considered free from heteroscedasticity. Conversely, a significance value < 0.05 indicates the presence of heteroscedasticity.

Table 5. Heteroscedasticity Test Results

Independent Variables	Sig.	Decsription
ROA	0.134	No indication of Heteroscedasticity
CR	0.336	No indication of Heteroscedasticity
DER	0.134	No indication of Heteroscedasticity
FCF	0.250	No indication of Heteroscedasticity

Source: Processed data (2025)

Based on the results of the heteroscedasticity test using the Glejser method presented in Table 5, the significance values for each independent variable were all greater than 0.05. The profitability variable (Return on Assets/ROA) has a significance value of 0.134, the liquidity variable (Current Ratio) of 0.336, the solvency variable (Debt to Equity Ratio/DER) of 0.134, and the free cash flow (FCF) variable of 0.250. Significance values greater than 0.05 for all independent variables indicate that there are no signs of heteroscedasticity in the regression model. Thus, it can be concluded that the residual variance across observations is constant or homogeneous. This indicates that the regression model used in this study has met the classical assumption of homoscedasticity and is suitable for use in further regression analysis.

4.3. Results of the Regression Analysis

After the regression model satisfied the classical assumption tests, multiple linear regression was conducted to examine the effects of profitability (ROA), liquidity (CR), solvency (DER), and free cash flow (FCF) on firm value (PBV) in consumer goods manufacturing companies. The analysis included t-tests for partial effects, an F-test for the simultaneous effect, and the coefficient of determination (R^2) to assess the model's explanatory power. The results are presented below:

Table 6. Results of the Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.530	.528		1.004	.317
	ROA	22.895	3.584	.479	6.388	.000
	CR	.363	.087	.289	4.159	.000
	DER	-.114	.265	-.030	-.429	.668
	FCF	8.122	1.891	.315	4.294	.000

Source: Processed data (2025)

Based on the results of the multiple linear regression analysis, the constant term was found to be 0.530, and the regression coefficients for each independent variable were as follows: ROA at 22.895, CR at 0.363, DER at -0.114, and FCF at 8.122. Thus, the regression equation can be expressed as follows:

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$$Y = 0.530 + 22.895X_1 + 0.363X_2 - 0.114X_3 + 8.122X_4 + \epsilon$$

This regression equation shows that the constant term of 0.530 indicates the company's value (PBV) when all independent variables namely, ROA, CR, DER, and FCF are assumed to be zero. The positive regression coefficient for ROA, which is 22.895 indicates that every one-unit increase in ROA will increase the firm's value by 22.895 units, assuming the other independent variables remain constant. The regression coefficient for the Current Ratio (CR), which is positive at 0.363, indicates that a one-unit increase in CR increases the firm's value by 0.363 units, holding all other variables constant. This suggests that a higher level of liquidity tends to increase the firm's value. Furthermore, the regression coefficient for the Debt-to-Equity Ratio (DER) is negative at –0.114, indicating that a one-unit increase in DER decreases the company's value by 0.114 units, holding all other independent variables constant. This suggests that higher debt levels tend to decrease the company's value. Meanwhile, the regression coefficient for free cash flow (FCF) is 8.122 and positive, indicating that a one-unit increase in free cash flow increases the firm's value by 8.122 units, holding all other variables constant. This suggests that the more free cash flow a firm has, the higher its value in the eyes of investors.

Partial Test Results (t)

The t-test was conducted to examine the partial effects of ROA, CR, DER, and FCF on firm value (PBV). A significance value (Sig.) < 0.05 indicates a significant effect, while a value > 0.05 indicates an insignificant effect. The direction of the effect is determined by the sign of the regression coefficient. The t-test results are presented below:

Table 7. Partial Test Results (t)

Independent Variables	T-Statistic	P-Value	Decsription
ROA	6.388	.000	Significant
CR	4.159	.000	Significant
DER	-.429	.668	Not Significant
FCF	4.294	.000	Significant

Source: Processed data (2025)

Based on the results of the (partial) t-test presented in Table 7, it is found that the profitability variable, proxied by Return on Assets (ROA), has a t-statistic value of 6.388 with a significance level (p-value) of 0.000. This significance value is less than 0.05, so it can be concluded that ROA has a positive and significant effect on firm value (PBV). This indicates that the higher a firm's profitability, the higher its value. The liquidity variable, proxied by the Current Ratio (CR), has a t-statistic of 4.159 with a significance value of 0.000. A p-value less than 0.05 indicates that the Current Ratio has a positive and significant effect on firm value. Thus, a firm's ability to meet its short-term obligations plays a crucial role in enhancing firm value. Furthermore, the solvency variable, proxied by the Debt-to-Equity Ratio (DER), has a t-statistic of –0.429 with a significance level of 0.668. Since this significance level is greater than 0.05, the DER does not have a significant effect on firm value. These results indicate that the level of a company's debt utilization has not yet been able to exert a meaningful influence on the value of companies in the consumer goods sector. Meanwhile, the free cash flow (FCF) variable has a t-statistic value of 4.294 with a significance level of 0.000. A p-value less than 0.05 indicates that free cash flow has a positive and significant effect on firm value. This suggests that the more free cash flow a company has, the higher its value in the eyes of investors.

Results of the Simultaneous Test (F)

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The F-test was conducted to examine the simultaneous effects of ROA, CR, DER, and FCF on firm value (PBV). If the significance value (Sig.) is < 0.05, the independent variables collectively have a significant effect on firm value; otherwise, the effect is considered insignificant. The F-test results are presented below:

Table 8. Simultaneous Test Results (F)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	579.242	4	144.810	37.809	.000[b]
	Residual	497.910	130	3.830		
	Total	1077.152	134			

Source: Processed data (2025)

Based on the results of the F-test (simultaneous test) in the ANOVA table 8, the calculated F-value was 37.809 with a significance value of 0.000. Since the significance value is less than 0.05, it can be concluded that the independent variables consisting of ROA, CR, DER, and FCF simultaneously have a significant effect on the dependent variable, namely firm value (PBV). This indicates that the regression model used is appropriate for this analysis, and that the combination of these four independent variables collectively explains the variation in changes in firm value in the consumer goods sector.

Coefficient of Determination Test

The coefficient of determination (R^2) test is used to measure the extent to which the independent variables can explain the variation in the dependent variable. The coefficient of determination ranges from 0 to 1. The higher the R^2 value, the stronger the ability of the independent variables to explain changes in the dependent variable. Conversely, a smaller R^2 value indicates that the independent variables' ability to explain the variation in the dependent variable is more limited. In this study, the coefficient of determination is assessed using the Adjusted R-Square value, as this value has been adjusted for the number of independent variables used in the model, thereby providing more accurate results. A high Adjusted R-Square value indicates that the regression model used has a good goodness of fit, while a low value indicates that there are still other factors outside the model that influence the dependent variable. The following are the results of the coefficient of determination (R^2) test in this study:

Table 9. Coefficient of Determination Test Results (F)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.733	0.538	0.524	1.957

Source: Processed data (2025)

Based on the results of the coefficient of determination test presented in Table 9, the correlation coefficient (R) was found to be 0.733. This value indicates a positive and fairly strong relationship between the independent variables namely, profitability (Return on Assets/ROA), liquidity (Current Ratio), solvency (Debt-to-Equity Ratio/DER), and free cash flow (FCF) and the dependent variable, which is the company's Price-to-Book Value (PBV). The R-squared value of 0.538 indicates that 53.8% of the variation in changes in company value can be explained by the variables ROA, CR, DER, and FCF collectively. Meanwhile, the remaining 46.2% is explained by other factors outside the scope of this study that were not included in the research variables.

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4.4. Discussion

4.4.1. The Effect of profitability (ROA) on firm value

The results of the first hypothesis test indicate that profitability (Return on Assets, ROA) has a positive and significant effect on firm value, with a regression coefficient of 22.895 and a significance level of 0.000 < 0.05. This means that the first hypothesis (H1) is accepted, which states that profitability has a positive effect on the value of manufacturing companies. This finding supports Spence's (1973) signaling theory, which states that high profitability sends a positive signal to investors about a company's performance. A high ROA indicates that a company is able to utilize its assets efficiently to generate profits, thereby increasing investor confidence and ultimately enhancing the company's value in the capital market. A study by Jonnius & Marsudi (2021) shows that profitability, measured through financial ratios such as ROA and ROE, has a significant effect on firm value, as proxied by Tobin's Q. These findings confirm that profitability is a strong fundamental signal for investors in determining firm valuation in the capital market.

The magnitude of the ROA regression coefficient (22.895) indicates that profitability is the most dominant factor in determining the value of manufacturing companies. Every 1% increase in ROA increases PBV by 22.895 units. This indicates that investors in the manufacturing sector place great emphasis on a company's ability to generate profits from its assets. The magnitude of ROA's influence on firm value suggests that efficient asset utilization is a key factor that is highly valued by the market. This finding is consistent with research by Sanjaya et al. (2025), which shows that operational efficiency and profitability have a positive impact on the value of manufacturing companies, where high profitability reflects management's success in controlling costs and optimizing asset utilization.

The results are consistent with Ristiani & Sudarsi (2022), which found that ROA has a positive and significant effect on firm value (Tobin's Q) in manufacturing firms. Research by Fadhilah et al. (2022) also indicates that profitability, measured by Return on Assets (ROA), has a positive and significant effect on firm value in manufacturing companies listed on the , where companies with high ROA tend to have better market valuations because profitability is a financial performance indicator valued by investors. A study by Nofriyani et al. (2021) also supports these findings by stating that ROA has a significant positive effect on firm value (PBV) in manufacturing companies. Furthermore, Firmansyah (2024), in his study of the consumer goods industry for the 2018–2023 period, also found that ROA has a significant positive effect on firm value. This finding is also consistent with the study by Chrisnando et al. (2024), which employed the Resource-Based View (RBV) approach and showed that profitability is a key performance indicator that reflects the strength of a company's internal resources in enhancing business performance. The consistency of these research results with previous studies reinforces the argument that profitability is a key determinant of firm value.

In the context of manufacturing companies, high profitability reflects operational efficiency, management's ability to control production costs, and the effectiveness of marketing and sales strategies. A manufacturing company with a high ROA indicates that management is able to optimize the use of productive assets such as machinery, equipment, and production facilities to generate profitable output. Investors will value such companies more highly because consistent profitability signals strong growth prospects and the company's ability to deliver attractive returns to shareholders.

4.4.2. The Effect of liquidity (Current Ratio) on firm value

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The results of the second hypothesis test indicate that liquidity, or the current ratio (CR), has a positive and significant effect on company value, with a regression coefficient of 0.363 and a significance level of 0.000 < 0.05. This means that the second hypothesis (H2) is accepted, which states that liquidity has a positive effect on the value of manufacturing companies. This finding supports signaling theory, which states that good liquidity sends a positive signal to investors regarding the company's ability to meet its short-term obligations. A high current ratio indicates that the company has sufficient current assets to cover its current liabilities, thereby reducing short-term financial risk and increasing investor confidence in the company's financial stability. A company's ability to meet its short-term obligations creates a positive perception for investors when assessing the company's market valuation. Good liquidity assures investors that the company possesses short-term financial stability and is capable of weathering uncertain economic conditions. These research results align with a study Rinofah et al. (2022), found liquidity has a significant effect on the value of manufacturing companies. Firmansyah (2024) in his study also supports these findings by stating that the current ratio (CR) has a significant positive effect on firm value in the consumer goods industry during the 2018–2023 period. The consistency of these results indicates that the market values a company's ability to maintain liquidity as an indicator of short-term financial health.

In the context of manufacturing companies, good liquidity is crucial because this sector is characterized by working capital-intensive operations. Effective working capital management influences a company's ability to meet short-term obligations and maintain operational sustainability in a dynamic environment (Nissa et al., 2025). Based on the descriptive statistics, the average Current Ratio of 3.0034 with a range from 0.7376 to 13.3955 indicates a very high degree of liquidity variation among manufacturing companies. An average value above 2 indicates that most companies in the sample have healthy liquidity. However, it should be noted that excessively high liquidity (such as the maximum value of 13.3955) can also be a negative signal because it indicates the presence of unproductive idle funds or inefficient working capital management.

Companies with a Current Ratio that is too low (close to or below 1) face the risk of liquidity problems that can disrupt operations and erode the confidence of creditors and investors. Conversely, companies with a Current Ratio that is too high may have too many unproductive current assets, such as idle cash or excessive inventory, which could otherwise be invested to generate higher returns.

4.4.3. The Effect of solvency (DER) on firm value

The results of the third hypothesis test show that solvency, proxied by the Debt-to-Equity Ratio (DER), does not significantly affect firm value, with a regression coefficient of -0.114 and a significance level of 0.668 > 0.05. This means that the third hypothesis (H3) is rejected, which states that solvency has a positive effect on the value of manufacturing firms. Although the regression coefficient indicates a negative direction (-0.114), its effect is not statistically significant. This indicates that, for manufacturing firms, leverage or capital structure is not a primary factor investors consider when evaluating a firm, or that its effect on firm value is complex and nonlinear. This finding is consistent with a study Hendrawan & Djawoto (2022) showing that the Debt-to-Equity Ratio (DER) does not have a significant effect on firm value, meaning that capital structure is not always the primary determinant of firm value in the market.

The results of this study are consistent with several previous studies that also found that the DER does not have a significant effect on firm value. A study by Ristiani & Sudarsi (2022) found that the DER does not affect firm value as measured by Tobin's Q. A study by Nofriyani

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et al. (2021) also stated that the DER does not have a significant effect on firm value (PBV) in the manufacturing sector. Furthermore, Firmansyah (2024), in his study of the consumer goods industry for the 2018–2023 period, also found that the DER does not have a significant effect on firm value. Similar findings were obtained from a study Khairunnisa et al. (2020), which found that the DER does not have a significant effect on firm value. A study by Saputri & Bahri (2021) also revealed that leverage, as proxied by the DER, does not have a significant effect on firm value, because investors tend to focus on a company's ability to generate profits rather than its capital structure (leverage has no significant effect on firm value).

Although the DER does not have a significant effect in this study, management still needs to be vigilant against the risk of overleveraging, which can lead to financial distress, especially in uncertain economic conditions or when profitability declines. A prudent capital structure policy is one that balances the use of leverage for growth with maintaining the company's financial stability.

4.4.4. The Effect of free cash flow on firm value

Based on the test results, it was found that free cash flow (FCF) affects firm value with a significance level of 0.000 (less than 0.05), a t-value of 4.294, and a regression coefficient of 8.122. This indicates that free cash flow has a significant positive effect on firm value; therefore, (H4) which states that free cash flow has a positive effect on firm value is accepted. High free cash flow (FCF) can serve as a positive signal that the company is capable of increasing its value. This is because higher free cash flow indicates that the company is healthier, as it possesses available free cash for growth, debt repayment, and dividends. This indicates that the higher the value of free cash flow generated by the company, the more the company's value will increase. When there is an increase in free cash flow, it will elicit a positive response from investors regarding the company's performance and its ability to generate cash growth in the future. The results of this study are consistent with research conducted by (Surya & Sipahutar, 2024). This cash flow reflects the rate of return for investors, whether in the form of debt or equity. Free cash flow can be used to pay off debt, repurchase shares, pay dividends, or be retained for future growth opportunities. When a company must issue shares to raise capital, this results in a decrease in earnings per share. Free cash flow is one indicator used to measure a company's ability to return profits to shareholders through debt reduction, increased dividends, or share buybacks, thereby also increasing the company's value. Free cash flow is a key determinant in determining a company's value, so company management is more focused on efforts to increase free cash flow. A company with high free cash flow indicates that it is better able to weather adverse conditions because it has the opportunity to make investments and capital expenditures to maintain ongoing operations. Additionally, positive free cash flow sends a positive signal to investors, as they perceive that the company has excess cash available to pay dividends.

These results confirm signaling theory and free cash flow theory, which state that the availability of free cash flow sends a positive signal to investors regarding the company's financial health and management's flexibility in making strategic decisions. High free cash flow indicates that the company is able to generate cash from operations after meeting all investment needs to maintain and develop its productive assets.

These findings are consistent with a study Hasanudin et al. (2022) that emphasizes the importance of operating cash flow in improving company performance. Although that study used ROA as the dependent variable, the implication is the same: a company's ability to generate cash from operations is a crucial fundamental indicator. A study Façanha (2023) also

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supports this finding by stating that cash flow information in financial statements helps stakeholders make better decisions. Free cash flow has several advantages as a measure of corporate performance compared to accounting profit. First, FCF is more difficult to manipulate than profit because it is based on actual cash flows rather than accounting accruals. Second, FCF reflects cash available for distribution to shareholders or for new investments, providing a more realistic picture of the company's economic value. Third, FCF accounts for reinvestment needs to maintain and develop assets, thus providing a more comprehensive picture of the sustainability of the company's cash flow.

Based on the descriptive statistics, the average free cash flow in the study sample was 0.1218, or approximately 12.18%, with a range from -0.0846 to 0.6450. The positive average value indicates that, in general, the manufacturing companies in the sample were able to generate free cash flow after meeting their operational and investment needs. However, the presence of a negative minimum value (-0.0846) indicates that some companies experience a free cash flow deficit, which may be caused by massive investments in expansion or difficulties in generating cash from operations.

Companies with negative FCF require special attention because this situation is not sustainable in the long term. Prolonged negative FCF can force a company to rely on external financing on an ongoing basis, which increases leverage and financial risk. Conversely, companies with consistently high FCF tend to have higher market valuations because investors value the company's ability to generate cash to distribute or reinvest. However, it should be noted that persistently excessively high free cash flow can also give rise to agency problems, as explained in the free cash flow hypothesis by Jensen (1986). If management has excess free cash flow but no profitable investment projects, there is a risk that the cash will be used for inefficient investments or for managerial consumption (perquisites). Therefore, investors also pay attention to how management allocates free cash flow, whether for value-creating investments, dividend payments, or share buybacks (buybacks). By focusing on increasing free cash flow, manufacturing companies can not only enhance corporate value in the short term but also build a strong foundation for sustainable growth and long-term shareholder value.

4.4.5. The Simultaneous effect of independent variables on firm value

The results of the F-test show that, simultaneously, the variables ROA, CR, DER, and FCF have a significant effect on company value, with a calculated F-value of 37.809 and a significance level of $0.000 < 0.05$. This indicates that the regression model is a good fit and that these four independent variables together can explain variation in changes in firm value in manufacturing companies. The coefficient of determination indicates an Adjusted R-Square value of 0.524, or 52.4%, meaning that 52.4% of the variation in firm value can be explained by ROA, CR, DER, and FCF, while the remaining 47.6% is explained by other factors not included in this research model.

An Adjusted R-Square value of 52.4% indicates that this research model possesses fairly good predictive and explanatory capabilities. This value is substantially higher than that found in many similar studies, which generally have R^2 values ranging between 20–40%. This improvement likely stems from including the free cash flow variable, which has been shown to significantly affect firm value. Although an Adjusted R-Square value of 52.4% can be considered quite good, 47.6% of the variation in firm value remains unexplained by factors outside this research model. This indicates that firm value is influenced by many complex and mutually interacting factors.

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From a holistic perspective, the results indicate that manufacturing firm value is determined by a combination of fundamental financial factors. Of the four variables tested, three (ROA, CR, and FCF) had a significant effect, while one (DER) did not. This provides several important insights:

1. Profitability remains the primary driver of corporate value. With the largest coefficient (22.895), ROA is the most dominant factor in determining the value of manufacturing companies. This confirms that, ultimately, a company's ability to generate profits is what investors value most.
2. Free cash flow emerges as the second most important factor after profitability. With a coefficient of 8.122, FCF indicates that investors look not only at accounting profits but also at a company's ability to generate cash for distribution or reinvestment.
3. Liquidity also plays an important role, albeit with a smaller influence. This suggests that investors value short-term financial stability as the foundation for long-term growth.
4. Capital structure (leverage) is not a major consideration in valuation, indicating that investors focus more on a company's ability to generate value than on how the company is financed, as long as profitability and cash flow are well maintained.

5. Conclusion

This study was designed to obtain evidence of the effects of Return on Assets (ROA) (X1), Current Ratio (CR) (X2), Debt-to- Equity Ratio (DER) (X3), and free cash flow (FCF) on the firm value of manufacturing companies (Y) listed on the Indonesia Stock Exchange during the 2020–2024 period. Based on the results of the analysis and discussion, it can be partially concluded that the profitability measures Return on Assets (ROA), Current Ratio (CR), and free cash flow (FCF) have a positive and significant effect on the firm value of manufacturing companies in the consumer goods sector, whereas the solvency measure, Debt-to-Equity Ratio (DER), does not have a significant effect on firm value. Simultaneously, all four variables ROA, CR, DER, and FCF have a significant effect on firm value. The coefficient of determination test indicates that firm value can be explained quite well by the variables ROA, CR, DER, and FCF. Therefore, it can be concluded from these results that companies with strong financial performance can drive an increase in firm value. This finding reinforces the empirical evidence that financial performance plays a significant role in determining the value of manufacturing companies. In practical terms, the results of this study indicate that company management needs to focus on improving profitability, optimizing liquidity management, and effectively controlling and utilizing free cash flow to increase corporate value. For investors, the results of this study can serve as a basis for making investment decisions by emphasizing financial indicators such as profitability, liquidity, and free cash flow ratios to measure the value of manufacturing companies in the consumer goods sector. This study still has limitations that need to be addressed because it only uses manufacturing companies in the consumer goods sector as the research subjects; therefore, the results may not necessarily be generalizable to other industrial sectors. Second, the independent variables used in this study are limited to profitability, liquidity, solvency, and free cash flow; there are many other factors that could potentially influence corporate value. The study period is limited to 2020–2024, so it does not yet reflect the companies' long-term conditions in a comprehensive manner.

The results of this study have both theoretical and practical implications. Theoretically, this study supports signaling theory, which states that financial performance information particularly profitability, liquidity, and free cash flow serves as an important signal for

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investors in assessing a company's value. These findings strengthen the empirical evidence that financial performance plays a significant role in determining the value of manufacturing companies. Practically, the results of this study indicate that company management needs to focus on improving profitability, optimizing liquidity management, and effectively controlling and utilizing free cash flow to increase firm value. For investors, the results of this study can serve as a basis for consideration in making investment decisions, with an emphasis on profitability, liquidity, and free cash flow ratios as key indicators for company valuation.

Based on the research findings and conclusions obtained, future research is recommended to expand the scope of the study to other industrial sectors beyond the consumer goods sector and to extend the observation period in order to capture the dynamics of financial indicators that influence firm value in the long term. The inclusion of additional variables such as firm size, sales growth, dividend policy, and a wider range of corporate governance measures is expected to provide a more comprehensive understanding of the factors that determine firm value.

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