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THE EFFECT OF CAPITAL STRUCTURE, FREE CASH FLOW AND FIRM SIZE ON FIRM VALUE WITH ESG DISCLOSURE AS A MODERATING VARIABLE

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ABSTRACT

This study will examine the influence of capital structure, free cash flow, and company size on company value during 2020–2024, with Environmental, Social, and Governance (ESG) disclosure as a moderating variable in industrial companies listed on the Indonesia Stock Exchange. The researchers analyzed the data using selective sampling and a quantitative approach known as Moderated Regression Analysis (MRA), which produced 187–188 conclusions. The findings demonstrate that while capital structure and firm size have a positive and significant impact on business value, free cash flow has a negative impact. Firm size, free cash flow, and firm value are all impacted by ESG disclosure, but the relationship between capital structure and firm value is unaffected. In general, ESG moderates business value selectively.

Keywords: Capital Structure, Free Cash Flow, Firm Size, ESG, Firm Value

ABSTRAK

Dalam penelitian ini, Environmental, Social, and Governance (ESG) merupakan variabel moderator untuk bisnis industri yang terdaftar di Bursa Efek Indonesia, mengkaji bagaimana arus kas bebas, struktur modal, dan ukuran perusahaan memengaruhi nilai perusahaan antara tahun 2020 dan 2024. Pengambilan sampel secara selektif dan teknik kuantitatif yang disebut Analisis Regresi Termoderasikan (MRA) digunakan untuk menganalisis data, yang menghasilkan 187-188 temuan. Berdasarkan hasil penelitian, nilai perusahaan diketahui dipengaruhi secara signifikan oleh arus kas bebas dengan arah pengaruh negatif, sedangkan pengaruh positif untuk nilai perusahaan ditunjukkan oleh struktur modal dan skala bisnis. Pengungkapan ESG tidak berdampak pada hubungan antara struktur modal dan nilai bisnis, namun pengungkapan tersebut berdampak pada hubungan antara nilai perusahaan dengan ukuran perusahaan dan arus kas bebas. Secara keseluruhan, nilai suatu perusahaan dipengaruhi oleh ESG sebagai variabel moderasi yang bersifat selektif.

Kata kunci: Struktur Modal, Arus Kas Bebas, Ukuran Perusahaan, ESG, Nilai Perusahaan

INTRODUCTION

One of Indonesia's most important economic pillars is the manufacturing sector, which increases non-oil and gas exports, contributes significantly to the country's GDP, and creates jobs. The performance of industrial enterprises listed on the Indonesia Stock Exchange (IDX) is heavily influenced by local macroeconomic conditions and currency rate stability because these companies frequently produce their financial statements in Indonesian rupiah. Because it offers financing and an investing platform that enables the most effective capital allocation based on risk and return, the IDX is important in this regard (Adi et al, 2020). Despite shifting conditions, the industrial sector nevertheless contributes significantly to the national economy. In 2024, the

sector contributed approximately 18.98% to Indonesia's GDP, indicating that manufacturing continues to be a leading sector in driving economic growth (Goodstas.id). Furthermore, in the second quarter of 2025, the manufacturing sector recorded a growth of 5.68% (year-on-year), which represents the highest growth in more than a decade, with a contribution of 18.67% to GDP. This achievement reflects an acceleration in manufacturing performance driven by increased production and exports, particularly in the basic metals and food and beverage subsectors (CNBC Indonesia Research,2025). However, behind these achievements, there is a phenomenon indicating a mismatch between macroeconomic growth and real conditions in the field. The Manufacturing Purchasing Managers' Index (PMI) data shows that industrial activity is actually in a contraction phase, with index values remaining below the expansion threshold for several consecutive months. This condition indicates that although the manufacturing sector is growing in aggregate, industry players are still facing pressures, especially in terms of demand and production. The sector's problems have been made worse by the depreciation of the rupiah, high import raw material costs, and declining consumer purchasing power. These mistakes could lower the company's profitability and, thus, its worth.

Some present performances and potential are assessed by investors through its share price, which is sometimes referred to as firm value (Santoso & Wijaya, 2022). Long-term profitability potential is indicated by a high firm value, and the company is believed by the market to have favorable future prospects (Brigham & Houston, 2019). A company's value heavily influences investors' perceptions of its performance and future. Businesses must efficiently manage important factors including company size, free cash flow, and capital structure during unpredictable times. A company's financial choices regarding debt-to-equity ratios are referred to as its capital structure. Even though excessive debt may increase financial risk, good debt management may increase a company's value through tax benefits (Yanti & Darmayanti, 2022). Another crucial indicator, namely free cash flow (FCF), is a measure of a company's worth.FCF gauges a business's capacity to make money for debt repayment, dividend payments, and investments. FCF is a crucial metric for industrial investors as it affects demand. Another element that affects a company's value is its size. Big businesses frequently have more stability and financial resources. On the other hand, Environmental, Social, and Governance (ESG) disclosure has been recognized as an important factor in company evaluation due to the growing concern over sustainability matters. ESG not only reflects corporate social responsibility but also serves as an indicator to investors concerning governance quality and business sustainability (Putri & Haryanto, 2021). Good ESG disclosure can upsurge firm value by attracting institutional investors who are oriented toward sustainability, as well as reducing reputational and litigation risks. ESG moderates the effects of capital structure, free cash flow,

and company size on firm value in the manufacturing industry whereas firm value is influenced by both economic and sustainability factors.

Previous studies on the variables affecting corporate value produced contradictory results. It is claimed by Putri et al. (2025) that a company's value is greatly impacted by both capital structure and ESG performance. It is revealed by this outcome that firm value can be simultaneously influenced by the combination of sustainability factors and corporate financing policies. It is shown by the research of Devia Marlina (2025) that a firm's capital structure influences its value more than its size does. It was found by another study conducted by Abdiarsa & Harto (2024) that corporate value is increased by ESG transparency and company size, while capital structure is not highly significant. However, Ayulianis et al. (2024) found that corporate value is significantly and negatively impacted by ESG and capital structure. These variations suggest that more investigation is necessary to completely understand how firm value is impacted by capital structure, free cash flow, and business size, particularly in Indonesian manufacturing enterprises. Researchers hardly ever consider ESG disclosure as a moderating variable. Because the firm value link involving capital structure, free cash flow, and company scale is examined in relation to the effects of ESG disclosure. Hence, this study is considered distinctive. Given the industrial sector's significant economic contribution and the difficulties it faces with regard to the environment, society, and government, this is particularly crucial.

The manufacturing sector was chosen because it significantly boosts Indonesia's exports, GDP, and employment. Despite its growth, the sector still faces challenges such as exchange rate fluctuations, high import costs of raw materials, and declining purchasing power, which affect company performance. These conditions reflect operational complexity and risks that may influence firm value. According to the empirical phenomena and inconsistencies in previous study outcomes, the research is carried out under this title "The Effect of Capital Structure, Free Cash Flow, and Firm Size on Firm Value with ESG Disclosure as a Moderating Variable (Study on Manufacturing Companies Listed on the Indonesia Stock Exchange for the 2020–2024 Period).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency Theory

The connection between owners (principals) and management (agents) is described by agency theory, whereby management receives authority to run the company and make decisions (Jensen & Meckling, 1976) in Zaini, 2025). This relationship has the potential to create conflicts of interest due to variances in objectives, where management tends to prioritize individual interests, while owners expect an increase in firm value. Information asymmetry becomes a key factor that intensifies this conflict, as management has broader and faster access to information

compared to owners (Prasetyo, 2022). This condition enables opportunistic behavior by management in corporate decision-making (Krisna & Susilawati, 2023).

Signalling Theory

Spence's (1973) signaling theory states that companies work with outside parties to close information gaps between stakeholders and management. When making decisions, this data is utilized to evaluate the performance and health of the company. To increase investor, analyst, and creditor trust in the company's future prospects, signals must be pertinent, understandable, and credible (Hahn & Reimsbach, 2020). Therefore, companies need to disclose information transparently and consistently to accurately represent their condition and strategic direction.

Firm Value

Firm value demonstrates how successfully a company is achieving its goals. Researchers refer to investors' assessments of a company's overall performance as firm value, while shifts in stock prices frequently represent those assessments (Sari & Gantino, 2022). This indicates that firm value is strongly associated with the firm's capacity to enhance shareholder wealth. Firm value also takes into account specific circumstances that the corporation has gained as a consequence of public evaluation, such as customer opinions regarding operational operations and product performance. Thus, firm value not only represents investors' views on management effectiveness in utilizing resources but also demonstrates the relationship between operational performance and market valuation. Furthermore, Firm value is used as a statistic to assess a company's standing and market worth. It is described as the present worth of anticipated future sources of income (Syahzuni, 2021).

Capital Structure

The percentage of debt and equity used to fund operations and investments determines a company's capital structure (Subramanyam, 2017). The incorporation of borrowing within the firm's financial structure is an essential part of financial strategy because it can stimulate company growth; however, it also carries risks that must be carefully managed (Widiawati & Linawati, 2022). According to Gultom (2021), the proportion of liabilities within the financial structure can serve as an indicator to assess a firm's capacity to fulfill its commitments, both in the short term (such as interest payments) and in the long term (such as loan repayments). Additionally, Aini & Ikram (2025) state that debt provides tax advantages through interest expenses that can be deducted, allowing companies greater flexibility in allocating funds for expansion or performance improvement. Conversely, a high debt ratio raises financial risks like default and insolvency, which can affect the worth and profitability of a business.

Firm Size

Firm size, which is based on a number of performance criteria and resource requirements, reflects the size and operational capabilities of a corporate organization (Ulinuha & Nurdin, 2024). Firm size is generally determined based on several aspects, such as total assets, net worth, and number of employees (Nyoman et al., 2025). All of the company's assets directly contribute to its growth (Suyanto & Sofiyanti, 2022). In addition, a company's total income, issued shares, and organizational complexity may all be used to determine its size (Aulia & Purwasih, 2022). Based on these indicators, companies with large assets are categorized as large firms, while those with smaller assets are classified as medium or small enterprises.

Hypothesis Development

The Effect of Capital Structure on Firm Value

A corporation's financing sources and degree of risk are revealed through its financial structure (Signalling Theory). An elevated degree of debt usage can serve as an unfavorable indication for investors, as it reflects reliance on outside funding sources as well as increased liquidity risk and interest burden (Subramanyam, 2017). The company's long-term existence may be viewed with less optimism by investors as a result. Furthermore, from the perspective of Agency Theory, disputes between management and lenders may be triggered by overly high borrowing levels, and the firm's financial risk may be increased. In the manufacturing sector, this condition becomes more relevant due to the high demand for financing and sensitivity to changes in production costs and economic conditions. Several previous studies, such as Turrohma & Sudiyatno (2023), Putu & Devi (2024), Pramesti & Rizki (2024), and Vitriyanti & Rahyuda (2025) demonstrate that capital structure affects firm value. Overspending frequently raises financial risk, erodes investor trust, and, eventually, reduces the company's worth. Drawing upon the conceptual foundation and empirical findings, The following is the first hypothesis.

H_1: Capital structure has a negative effect on firm value

The Effect of Free Cash Flow on Firm Value

Signaling Theory defines a company's capacity to produce cash after fulfilling its investment needs is signaled by free cash flow (FCF). Financial flexibility and the company's capacity to distribute profit payouts or undertake expansion are indicated by high FCF, thus shareholder perception of firm value is enhanced. However, based on Agency Theory, high FCF may also create agency conflicts if it is used for inefficient investments (overinvestment). According to Vitriyanti & Rahyuda (2025), free cash flow significantly and favorably affects organizational value.

H_2 : Free Cash Flow has a positive effect on firm value

The Effect of Firm Size on Firm Value

Investors consider a company's size to be an indicator of its reputation, stability, and operational proficiency. Large companies often have greater levels of business sustainability and easier access to financing. A corporation's size has a significant impact on its value (Abdiarsa & Harto, 2024). Theoretical development and prior studies form the basis for the third hypothesis:

H_3 : Firm size has a positive effect on firm value

ESG Disclosure Moderates the Effect of Capital Structure on Firm Value

A non-financial indicator of a company's dedication to sustainable business practices is ESG disclosure, according to Signaling Theory. Investor risk perception can be reduced by strong ESG disclosure, especially in companies with high levels of debt. According to agency theory, openness through ESG disclosure may decrease agency conflicts and boost trust in a company's financial choices. Referring to Spence (1973) signaling theory, capital structure reflects financing risk. Although high debt levels are often perceived negatively, Investor perception can be improved by ESG disclosure as an additional signal. Investors consider companies with high debt levels but strong ESG disclosure to be more responsible and long-term oriented, thereby reducing perceived risk. ESG moderates the relationship between corporate value and capital structure, according to previous studies by Arofah & Khomsiyah (2023), Hutagalung & Hermi (2023), and Sari & Hasnawati (2026). Thus, the fourth hypothesis is:

H_4 : ESG disclosure moderates the effect of capital structure on firm value

ESG Disclosure Moderates the Effect of Free Cash Flow on Firm Value

Effective governance and transparency can prevent disputes over the use of free cash flow in Agency Theory. ESG disclosure enhances monitoring and reduces information asymmetry. Vitriyanti & Rahyuda (2025) found that sustainability variables can brace the connection among financial variables and firm value. According to theoretical development and prior research, the proposed hypothesis is: found that sustainability variables can brace the connection among financial variables and firm value. According to theoretical development and prior research, the proposed hypothesis is:

H_5 : ESG disclosure moderates the effect of free cash flow on firm value.

ESG Disclosure Moderates the Effect of Firm Size on Firm Value

Signaling Theory states that large companies with robust ESG disclosure gain credibility and a higher reputation than those with less transparency. ESG may help to reinforce the beneficial impact of company scale on firm value. In accordance with Abdiarsa & Harto (2024) research, the business value is positively impacted by ESG.and the correlation between a

company's size and value may be strengthened by ESG. According to theoretical development and previous studies, the proposed hypothesis is:

H_6 : ESG disclosure moderates the effect of firm size on firm value

RESEARCH METHOD

A quantitative methodology and causal-comparative research methodologies are used to examine the impact of business size, free cash flow, and capital structure on company value. A moderator must disclose environmental, social, and governance elements. The causal-comparative approach is appropriate because the goal of this study is to ascertain if ESG disclosure enhances or diminishes the relationship between independent factors and firm value. Hence, financial accounts and sustainability reports provide numerical data for quantitative analysis (Sugiyono, 2019).

This category comprises the majority of manufacturers listed on the Indonesia Stock Exchange (IDX) during 2020 and 2024. The manufacturing industry was chosen for ESG disclosure due to its significant economic impact and tight connections to sustainability and environmental issues. Examining the connection between manufacturing business value and ESG disclosure is becoming increasingly common because they typically operate with more complex processes and face greater social and environmental challenges compared to other industries. Deliberate sampling, which is choosing participants based on specific standards that support the goals of the study, was used to create the sample (Sugiyono, 2019). This technique was selected to ensure that the sampled companies provide complete and relevant sources. These are the sample criteria:

a. Between 2020 and 2024, active manufacturing businesses listed on IDX.
b. For industrial businesses, all financial reporting is done in Indonesian Rupiah.
c. The complete data required for the research is owned by the company.

Historical time series data for five years, from 2020 to 2024, consisting of secondary data as the main data source is used by this study. The selection of this period aims to obtain more up-to-date data and reflect company conditions during and after the post-COVID-19 recovery period. The post-pandemic recovery period is considered important because companies began strengthening financial performance, sustainability practices, and ESG disclosure to restore investor confidence and maintain firm value under changing economic conditions. Annual reports, sustainability reports, and other official documents that are accessible on different corporate websites and IDX were used to gather the data.

Referring to Sugiyono (2019), research variables are attributes that possess varying values and become the object of study to obtain data and explain their implications. Factors are classified as independent, dependent, and moderating in the study. In this study, the independent

factors are firm size (dependent variable), free cash flow, and capital structure. ESG disclosure, which acts as a moderator, the present independent and dependent variables' interaction is impacted by this. The measurements and operational definitions for the variables utilized in this investigation are as follows.

a. Firm Value

One important indicator of how effectively a business is achieving its objectives is firm value. Investors entire performance, which might be regarded as its worth, as indicated in share price movements (Sari & Gantino, 2022). The potential to grow shareholder wealth is directly tied to the value of its business. A company's worth may be calculated using the present value of anticipated future revenue streams. It may also be used as a statistic to assess the value and standing of a business (Syahzuni, 2021). To evaluate firm value, the basis of Tobin's Q Ratio is that carried out by Albitar et al (2020) and is explained below.

$$\text{Tobin}'\text{sQ} = \frac{(\text{Market Capitalization} + \text{Total Debt})}{\text{Total Asset}}$$

Market capitalization the per-unit share price by the number of outstanding units. Thus, the December 31st closing price of the stock is used in this calculation.

b. Capital Structure

The combination of debt and equity that a business uses to finance its operations and investments is referred to as its capital structure. (Subramanyam, 2017). According to Gultom (2021), the proportion of liabilities within the financial structure can serve as an indicator to assess a firm's capacity to fulfill its commitments, both in the short term (such as interest payments) and in the long term (such as loan repayments). Capital structure formula by Subramanyam (2017):

$$\text{Debt to Equity Ratio (DER)} = \frac{\text{Total Debt}}{\text{Total Equity}}\ x\ 100\%$$

c. Free Cash Flow

Free cash flow, or FCF, is the amount of money left over after a business has satisfied all of its operational and investment needs. The amount of money left over after fixed asset investments and working capital obligations have been satisfied, which may subsequently be distributed to creditors and shareholders, is one definition of free cash flow (Ross et al., 2000; Jensen, 1986). It is calculated with a formula:

$$\text{Free Cash Flow (FCF)} = \text{Operating Cash Flow} - \text{Capital Expenditure}$$

d. Firm Size

As demonstrated by a range of performance metrics and available resources, a company's size exposes its scope and operational capabilities (Ulinuha & Nurdin, 2024).

The determination of firm size is generally based on several aspects, such as total assets, net worth, and the number of employees (Nyoman et al., 2025). The scale of the business is suitable for all of its resources (Suyanto & Sofiyanti, 2022). It is calculated with a formula:

$$\text{Firm Size} = \ln\ (Total\ Asset)$$

e. ESG Disclosure

To demonstrate their commitment to sustainability and transparent corporate governance, non-financial businesses gather "ESG" data (Lee & Faff, 2022).

$$\text{ESG Score} = \frac{\text{Number of ESG Items Dsclosed}}{\text{Total ESG Indicators}}\ x\ 100\%$$

The data analysis for this study includes many statistical testing procedures, which are as follows:

a. Descriptive Statistical Analysis

Without making any conclusions, descriptive statistical analysis characterizes the characteristics of research data. The following values represent the lowest, maximum, median, mode, and average for each variable are presented (Sugiyono, 2019).

b. Classical Assumption Tests

i) Normality Test

To find out if the normal distributed dataset passes the normality test, the level of importance (Asymp. Sig.) is greater than 0.05, it is established that the dataset follows a normal distribution. (Ghozali, 2018).

ii) Multicollinearity Test

When the variance inflation factor (VIF) < 10 and the tolerance value > 0.10, the regression model is said to be free of multicollinearity. Excessive intercorrelations between independent variables can be found using the multicollinearity test (Ghozali, 2018).

iii) Heteroscedasticity Test

This model does not show heteroscedasticity at a significance level higher than 0.05. The unequal variances indicated by the residuals in the regression model were determined using the Glejser Approach (Ghozali, 2018).

iv) Autocorrelation Test

It is done to ascertain if the error terms in the present period are connected to those from earlier periods. Moreover, The Durbin-Watson (DW) approach is used for this assessment. The model is deemed autocorrelation-free if the DW statistic is within the upper limits (DU) and (4-DU) (Ghozali, 2018).

c. Moderated Regression Analysis (MRA)

ESG disclosure affects the link between free cash flow, capital structure, and company size. In this study, the moderating variable is Moderated Regression Analysis (MRA).

d. Hypothesis Testing

i) Partial Test (t-test)

Each independent variable's impact on the dependent variable is ascertained using a t-test. The independent variable is considered significant if the significance threshold is less than 0.05 (Ghozali, 2018).

ii) Simultaneous Test (F-test)

An independent variable with a threshold of less than 0.05 is considered significant. The t-test shows how each independent variable affects the dependent variable (Ghozali, 2018).

iii) Coefficient of Determination (R^2)

The coefficient shows how well the independent component forecasts the evolution of the dependent variable. The score 0 to 1 is the value range, where values nearer 1 indicate that the model has a higher capacity for explanation (Ghozali, 2018).

RESULTS AND DISCUSSION

Results

a. Descriptive Statistics Analysis

The data distribution was described using descriptive statistics. The state of the data is better understood thanks to this study, which also shows if the distribution of the data is generally uniform or varied between research samples.

The data processing results indicate that between 187 and 188 observations were used. With a range of 0–8 and a standard deviation of 0.935, the average capital structure is 0.80. This indicates that the data distribution is largely consistent and that businesses use loans less frequently than equity.

The free cash flow (FCF) variable ranges from -904,249,000,000 to 9,688,765,000,000, with an average value of 1,033,961,820,970.13. A large FCF data varies much, but a negative minimum value suggests that certain corporations have negative free cash flow.

The logarithm of the company's total assets varies between 27 and 34, with a mean of 29.80 and a standard deviation of 1.484. This shows that the firm size in the sample is very stable and does not vary much.

Tobin's Q has a mean of 1.95 and an SD of 1.598. Its values range from 1 to 11. A mean one shows that the sample's manufacturing enterprises' market worth exceeds their book value.

On a scale of 0 to 1, the ESG disclosure variable has a score of 0.72 and a standard deviation of 0.269. This shows that the ESG disclosures made by the majority of firms are virtually unchanged.

b. Classical Assumption Tests

Fundamental statistical assumptions while producing accurate and unbiased results is done by the regression models. Traditional assumption testing is done prior to starting the regression analysis. These tests are essential for figuring out whether the residuals and data satisfy the homoscedasticity, autocorrelation, multicollinearity, and normality assumptions. If these assumptions are fulfilled, the regression analysis can provide more accurate interpretations and conclusions.

i) Normality Test

Residuals are normally distributed (Kolmogorov-Smirnov) because with two tails, the asymptomatic significance at 0.099 (> 0.05). Therefore, the fulfillment of the normalcy requirement by the regression model and is prepared for more research. Additionally, the residual distribution is well-behaved and has no significant variation because the residual mean value is close to zero (0.0000000) and the standard deviation is 0.30383685. Normality tests allow statistical testing of regression models to yield accurate and dependable findings by verifying that residuals are evenly distributed.

ii) Multicollinearity Test

Based on the multicollinearity criteria (tolerance > 0.10 and VIF < 10), Multicollinearity problems do not arise in most of the variables. Multicollinearity FCF and FCF_ESG tolerances are less than 0.10 and VIF exceeds 10. Therefore, further treatment is required, such as data transformation or model re-specification, to improve the regression estimation results. Significant correlations between independent variables that can disrupt the stability and accuracy of regression findings are determined by the multicollinearity test.

iii) Heteroscedasticity Test

From the scatterplot output, the residual points appear to be dispersed randomly around the zero baseline on the Y-axis, without forming any distinct patterns such as

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funnel shapes, expansion trends, or wave-like structures. Consequently, in the regression model, no heteroscedasticity is found as both above and below zero, the data are dispersed equally. It is suitable for more study and fulfills homoscedasticity. In order for the regression model to produce precise estimates, the residual variance is constant across the data as verifying the heteroscedasticity test.

iv) Autocorrelation Test

At the dl limit is 1.55 and du is 1.80 for 143 observations and 6 variables; the Durbin-Watson (DW) test yields 0.898, which is less than these limits. Since the DW value (0.898) is smaller than dl (1.55), the regression model's positive autocorrelation may be inferred. This suggests that residuals are correlated across data, which suggests that the model has to be modified further since the autocorrelation requirement is not satisfied. To determine if the residuals are related to each other across data, the autocorrelation test is necessary, as autocorrelation may reduce the accuracy of regression estimation and hypothesis testing.

c. Hypothesis Testing

i) Moderated Regression Analysis (MRA)

This study sought to ascertain if the link between independent variables and company value increases or decreases by ESG disclosure. To know the moderating effect, interaction variables between ESG disclosure and each independent variable including DER_ESG, FCF_ESG, and SIZE_ESG are analyzed. The significance and coefficient values of the interaction terms are used to interpret the direction and strength of the moderating effect.

ESG disclosure does not affect the relationship between capital structure and firm value, but it strengthens the effect of free cash flow on firm value. On the othe hand, ESG between firm size and value with $p = 0.073 (> 0.05)$ (significance 0.011, negative coefficient), reducing the impact of size on value as investors place a higher value on sustainability performance.

ii) F-Test

All DER, FCF, company size, and ESG interaction, have a substantial impact on firm value (F statistic = 631.638, p-value < 0.05). The F test assesses the regression model's feasibility while also identifying whether independent factors affect dependent variables. The model's independent variables all have a considerable effect on Tobin's Q. Consequently, the interaction between the independent and dependent variables is thought to be accurately represented by the regression model.

iii) T-test

Independent variables' partial contribution influence as well as the relationship's direction. firm value is positively impacted by DER (0.001 < 0.05), negatively by FCF (0.022 < 0.05), and positively by firm size (0.000 < 0.05).

iv) Coefficient of Determination (R^2)

DER, and ESG interactions explain 96.5% of the variance in Tobin's Q, with external factors accounting for the remaining 3.5%. The coefficient of determination is used to show how effectively the independent variable can be described, and an appropriate regression model with significant explanatory power is implied by an Adjusted R Square close to R Square.

Discussion

The Effect of Capital Structure on Firm Value

Based on the t-test (DER) (p-value = 0.001), using additional debt can boost business value so the business value has significantly increased. According to signaling theory, debt utilization can provide investors a good indicator of a company's future prospects. Meanwhile, Agency Theory explains that debt can encourage managerial efficiency through mandatory payments, thereby improving company performance. In the manufacturing sector, the optimal use of debt also supports expansion and operational activities, which ultimately increases firm value. Furthermore, in the context of corporate financial risk, good corporate governance must balance the use of debt. According to a study by Perbiani et al. (2024), the risk of financial distress is significantly reduced by governance mechanisms. Without effective oversight, using debt may raise the chance of financial distress, even though capital structure may increase company value. Striking a balance between creating value and ensuring financial stability requires effective governance and an appropriate capital structure strategy. These findings align with Devia Marlina (2025) but contradict Turrohma & Sudiyatno (2023), Putu & Devi (2024), Pramesti & Rizki (2024), and Vitriyanti & Rahyuda (2025), who all state that capital structure negatively impacts company value. These discrepancies may be caused by differences in study periods, sample characteristics, and economic conditions that affect investors' perceptions of loan use. Therefore, it can be said that capital structure contributes favorably to increasing corporate value.

The Effect of Free Cash Flow on Firm Value

FCF significantly affects firm value via t-test. H2 is rejected because the beneficial impact hypothesis is not sufficiently supported by the available data. Investors may not always see increased FCF positively; without effective monitoring, FCF can lower business value and

be a cause of hardship. Investors are more cautious when examining cash allocation, despite the fact that FCF is regarded a favorable indicator of cash-generating potential according to Signaling Theory. Uncertainty in FCF allocation, particularly in industrial enterprises with significant investments, might be the cause. This study contradicts Vitriyanti & Rahyuda (2025) findings, which showed a strong positive effect, demonstrating that FCF does not always add to company value.

The Effect of Firm Size on Firm Value

The t-test results show that firm size has a positive and significant effect on firm value. This validates hypothesis 3 and the notion. Larger companies often have higher stability, stronger operational capabilities, and easier access to finance, which boosts investor trust. In Signaling Theory, business size is a positive indicator of credibility and future prospects. These findings are consistent with Abdiarsa & Harto (2024), but contradict Razak et al. (2025), who found no significant influence of business size on firm value.

ESG Disclosure Moderates the Effect of Capital Structure on Firm Value

This analysis rejects H4 because the effect of capital structure on business value is not lessened by ESG disclosure. Then, ESG disclosure has not been able to alter investor perceptions regarding the risks associated with debt usage. Although ESG is theoretically expected to improve investor perceptions through increased transparency, the results suggest that financial risk factors remain more dominant.Therefore, this study contradicts the outcomes of Arofah & Khomsiyah (2023), Hutagalung & Hermi (2023), and Sari & Hasnawati (2026).

ESG Disclosure Moderates the Effect of Free Cash Flow on Firm Value

ESG can reduce the impact of free cash flow on business value according to the MRA test findings, which appear to support the theory. Thus, this study supports H5. This finding suggests that ESG holds a role in enhancing transparency and reducing agency conflicts in the use of FCF. Agency Theory states that ESG helps improve managerial supervision and lessen information asymmetry. These outcomes correspond with the findings presented by Vitriyanti & Rahyuda (2025) which state that sustainability variables can brace the connection among financial variables and firm value.

ESG Disclosure Moderates the Effect of Firm Size on Firm Value

The results of the MRA test, which demonstrate that ESG can lessen the effect of company size on firm value, support hypothesis 6. It is demonstrated in this study that the impact of a company's size on its worth is lessened by ESG. In keeping with Signaling Theory, ESG should increase the positive signal of company size; however, it is demonstrated by the results of the study that this impact is not always present. These outcomes do not fully support the outcomes of Abdiarsa & Harto (2024) and differ from those of Razak et al. (2025).

CONCLUSION

The study shows ESG disclosure partly moderates firm value, while financial factors still matter:

1. Capital structure positively and significantly affects firm value. Effective debt management may increase a company's worth. Therefore, the present research fails to provide empirical backing for the first hypothesis (H1).
2. Increasing free cash flow does not raise company value and may lead to agency conflicts since the value of a business is decreased by free cash flow (FCF). Consequently, the second hypothesis (H2) is not supported by this investigation.
3. The size of the company positively affects its value. This demonstrates that investor trust is often higher for larger companies. Thus, our findings supports the third hypothesis (H3).
4. ESG disclosure does not weaken the effect of capital structure on firm value, so H4 is not supported. Consequently, investors' perceptions of debt risk are significantly influenced by ESG.
5. While lowering agency effects, ESG disclosure may improve transparency in the use of free cash flows. Therefore, the fifth hypothesis (H5) is supported by the data.
6. The detrimental effect of firm size on firm value can be lessened by ESG disclosure. This suggests that the effect of firm size on firm value is reduced by ESG, so H6 is partially supported in this study.

Overall, financial characteristics such as capital structure, free cash flow, and business size continue to have a major impact on firm valuation, with ESG disclosure merely moderating some of these associations. To sustain investor trust, companies should optimize their capital structure, increase the efficiency of free cash flow usage, and enhance ESG disclosure. When making investing decisions, investors should take into account both non-financial and financial considerations, such as ESG. Future researchers are encouraged to increase the number of variables, lengthen the study period, and increase the sample size in order to obtain more thorough results.

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FIGURE AND TABLE

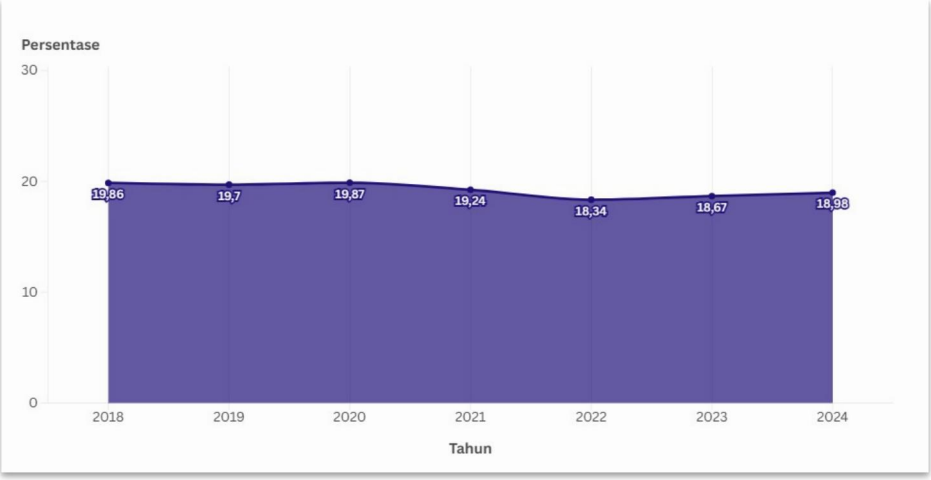

Figure 1. Contribution of the Manufacturing Sector to GDP
Source: World Bank, Ministry of Industry.

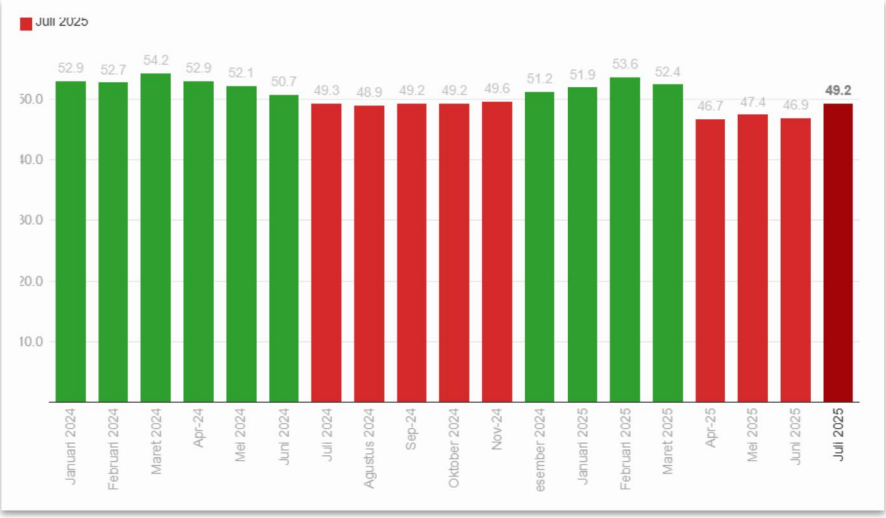

Figure 2. Indonesia Manufacturing PMI Data
Source: Purchasing Managers' Index, CNBC Indonesia Research, 2025.

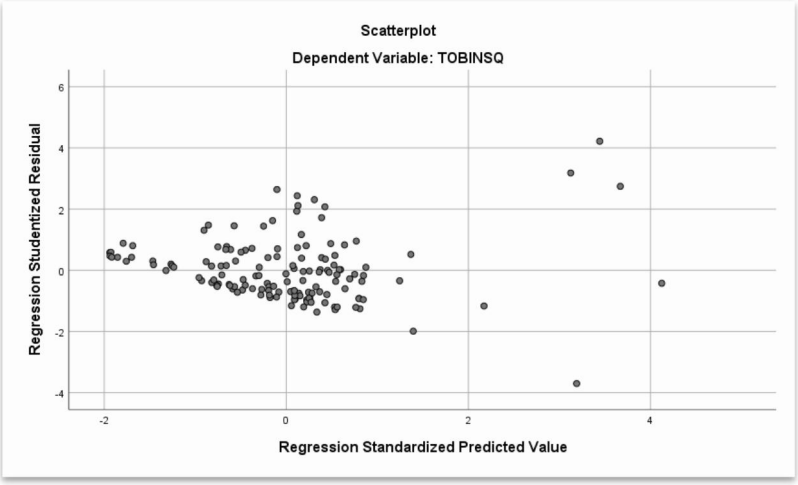

Figure 3. Heteroskedasticity Test Results
Source: Processed Data, 2026

Table 1. Descriptive Statistics Test Results

	N	Minimum	Maximum	Mean
DER	188	0	8	.80
FCF	187	-904,249,000,000	9,688,765,000,000	1,033,961,820,970.13
FS	188	27	34	29.80
TOBINSQ	188	1	11	1.95
ESG	188	0	1	.72
Valid N (listwise)	187			

Table 2. Normality Test Results

		Unstandardized Residual
N		143
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.30383685
Most Extreme Differences	Absolute	.068
	Positive	.063
	Negative	-.068
Test Statistic		.068
Asymp. Sig. (2-tailed)		.099[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Table 3. Multicollinearity Test Results

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	DER	.150	6.669
	FCF	.080	12.535
	FS	.946	1.057
	DER_ESG	.157	6.358
	FCF_ESG	.080	12.457
	FS_ESG	.603	1.658

Table 4. Autocorrelation Test Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.569[a]	.324	.294	1.367	.898

Predictors: (Constant), DER, FCF, FS, DER_ESG, FCF_ESG, FS_ESG
Dependent Variable: TOBINSQ

Table 5. Moderated Regression Analysis (MRA) Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.327	.197		-11.796	.000
	DER	.569	.173	.136	3.289	.001
	FCF	-2.957E-7	.000	-.131	-2.318	.022
	FS	3.234	.055	.960	58.500	.000
	DER_ESG	-.132	.073	-.073	-1.806	.073
	FCF_ESG	2.129E-13	.000	.154	2.740	.007

	FS_ESG	-.012	.005	-.053	-2.592	.011

Dependent Variable: TOBINSQ

Table 6. F-Test Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	365.300	6	60.883	631.638	.000[b]
	Residual	13.109	136	.096		
	Total	378.409	142			

a. Dependent Variable: TOBINSQ
b. Predictors: (Constant), DER, FCF, FS, DER_ESG, FCF_ESG, FS_ESG

Table 7. t-Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.327	.197		-11.796	.000
	DER	.569	.173	.136	3.289	.001
	FCF	-2.957E-7	.000	-.131	-2.318	.022
	FS	3.234	.055	.960	58.500	.000
	DER_ESG	-.132	.073	-.073	-1.806	.073
	FCF_ESG	2.129E-13	.000	.154	2.740	.007
	FS_ESG	-.012	.005	-.053	-2.592	.011

Dependent Variable: TOBINSQ

Table 8. Coefficient of Determination Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983[a]	.965	.964	.310

a. Predictors: (Constant), DER, FCF, FS, DER_ESG, FCF_ESG, FS_ESG
b. Dependent Variable: TOBINSQ