AJEMB
AMERICAN JOURNAL OF ECONOMIC AND MANAGEMENT BUSINESS

**American Journal of Economic and Business Management**
e-ISSN: 2835-5199
**Vol. 5 No. 6 June 2026**

# The Influence of Environmental Social and Governance (ESG), Liquidity, Leverage, and Firm Size on the Value of Manufacturing Companies Listed on the Indonesia Stock Exchange in 2021-2025

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**Keywords:**
ESG; Liquidity; Leverage; Firm size; Company Value.

**Abstract**

This study aims to analyze the simultaneous influence of Environmental, Social, and Governance (ESG), liquidity, leverage, and firm size on firm value. This study was conducted on manufacturing companies listed on the Indonesia Stock Exchange from 2021 to 2025. The population in this study consisted of 32 companies. Using a purposive sampling technique over a five-year period, this resulted in 160 research observations. This study involved four independent variables, namely Environmental, Social, and Governance (ESG), liquidity, leverage, and firm size. The data analysis technique used was panel data regression using EViews 12 with a Fixed Effect Model approach. The results indicate that Environmental, Social, and Governance (ESG) has no significant effect on firm value, liquidity has a significant positive effect on firm value, leverage has a significant positive effect on firm value, and firm size has no significant effect on firm value. Furthermore, the simultaneous test shows that Environmental, Social, and Governance (ESG), liquidity, leverage, and firm size jointly influence firm value.

## INTRODUCTION

In the ever-changing business world, a company's primary goal is to increase its firm value, which represents investors' perceptions of the company's performance and future (Sari & Wulandari, 2021). A company's value can typically be gauged by its stable and rising stock price, as stock prices serve as a key indicator of management's success in generating profits and improving shareholder welfare (Pratiwi & Sugara, 2023). Firm value reflects performance and potential, as evidenced by stock prices and various financial indicators. This figure reflects investors' expectations regarding the company's ability to generate profits and maintain operational sustainability (Fatoni & Sulhan, 2020).

A high firm value indicates that the company appears to have a promising future in the eyes of investors and creditors. This can be a positive signal or indicator that increases the interest of potential investors in investing their capital (Pratama et al., 2025). Firm value is closely related to investor interest and investment decision-making processes, while also illustrating how effectively management manages the company's assets (Putri & Wiagustini, 2025).

Rahmawati (2020) explains that a company is considered advanced and sustainable if it can enhance its corporate value. Developing corporate value refers to success in achieving targeted profits and upholding stakeholder welfare. In other words, corporate value reflects the success of business strategies, management quality, and industry competitiveness. Corporate value is a comprehensive economic measure that reflects how well a business entity creates value and wealth for its stakeholders. It is not limited to total assets but also reflects the quality of business strategy, operational performance, and market competitiveness (Adhi & Cahyonowati, 2023).

Firm value is crucial because it indicates shareholder welfare. It reflects the company's stock price in the market, which serves as a mirror of its prospects and current condition (Gz & Lisiantara, 2022). In capital markets, firm value reflects the price investors are willing to pay. Companies with high valuations tend to attract investors and creditors due to strong performance. For publicly listed companies, firm value is reflected in fluctuating stock prices, which are significantly influenced by market conditions as measured by the Jakarta Composite Index (JCI) (DN Sari & Purbowati, 2023).

According to the S&P Global report, Purchasing Managers' Index (PMI) data from Indonesia's manufacturing sector showed the index at 55.3 in May 2021, compared with 48.9 in August 2024, before rising again to 51.2 in December 2025. The PMI reflects demand, production activity, and overall manufacturing conditions. These fluctuations indicate uncertainty in operational performance, which may affect investor expectations regarding future profitability and firm value.

Firm value is essential because it reflects the company's condition and influences investor perceptions. Company owners strive to demonstrate strong performance to attract investors (Ningrum, 2022). Financial performance and firm value are crucial for investors as a basis for investment decisions. Firm value is typically associated with share price; higher share prices increase shareholder wealth and, consequently, firm value (Cahyani & Rahayu, 2022). One common measure of firm value is Price to Book Value (PBV). According to Brigham & Houston (2020), PBV is a ratio used to measure market valuation by comparing market price per share with book value per share.

Based on the manufacturing PBV graph for 2021–2025, the average PBV reflects differences in market valuation and fluctuations across periods. In 2021, PBV was 1.07, decreasing to 0.95 in 2022, rising slightly to 0.91 in 2023, then declining again to 0.73 in 2024 and 0.54 in 2025. These fluctuations indicate varying market perceptions of manufacturing companies, even within the same sector. The decline suggests that the market has not fully valued manufacturing firms optimally, despite their strategic role in the national economy. This phenomenon indicates issues in firm value formation influenced by unstable industry conditions. Therefore, it is important to examine internal factors such as ESG, liquidity, leverage, and firm size.

Today's business landscape requires companies not only to maximize profits but also to address Environmental, Social, and Governance (ESG) aspects. This aligns with increasing investor and public awareness of sustainability. ESG disclosure is one way companies demonstrate commitment to sustainability and social-environmental responsibility, which has gained global

attention (Henry Siswana & Ratmono, 2024). Investment evaluation has shifted from purely financial metrics to a broader assessment that includes sustainability indicators, where ESG serves as a benchmark for long-term risk and opportunity assessment. ESG disclosure increases transparency and reduces information asymmetry between management and investors. According to Difa & Larasati (2024), investors respond quickly to published sustainability information, which can influence firm performance.

The implementation of ESG in Indonesia has increased alongside global market demands and sustainable development policies (Deny & Firmansyah, 2025). This is reflected in the growing use of ESG indicators as benchmarks for corporate performance, covering both financial and non-financial aspects. ESG has become an important consideration in investment decisions, especially for investors concerned with social and environmental impacts. ESG involves evaluating how companies manage environmental impacts, fulfill social responsibilities, and maintain governance quality. In Indonesia, ESG implementation is increasingly relevant in line with global sustainability demands (Amel-Zadeh et al., 2017).

Besides ESG, liquidity is another important factor influencing firm value (Kasmir, 2019). High liquidity indicates a company's ability to meet short-term obligations without default risk. This sends a positive signal to investors that the company is financially healthy, thereby increasing investor confidence and share demand, which may drive up share prices and firm value (Sari, 2020).

Another variable influencing firm value is leverage, which refers to the use of borrowed funds to finance operational activities (Dewantari et al., 2020). Higher leverage increases interest expenses, which may reduce firm value (Rejeki & Haryono, 2021). Leverage measures the extent to which debt is used to finance assets. Excessive leverage increases financial risk and may lead to extreme leverage conditions. Therefore, firms must maintain a balanced capital structure. Investors closely monitor leverage as an indicator of risk and return potential.

Firm size is another factor influencing firm value. Firm size is a scale used to classify company magnitude, commonly measured through total assets. Larger total assets and sales indicate a larger company. Higher assets reflect greater invested capital, while higher sales indicate stronger cash flow (Azizah & Widyawati, 2021).

## METHOD

### Types of Research

The research method was designed through a series of steps, including the operationalization of variables, determination of the type and source of data, data collection procedures, and the design of data analysis and hypothesis testing. An explanatory quantitative approach was used in this study. Data were collected from a specific population or sample and analyzed using statistical techniques. According to Sekaran and Bougie (2011), this scientific approach relies on numerical data that can be processed using mathematical and statistical methods.

### Research Population

According to Sekaran and Bougie (2011), a population is the sum of all groups of individuals and events that interest researchers. The population in this study was 221 manufacturing companies listed on the Indonesia Stock Exchange for the period 2021-2025 .

**Research Sample**

According to Sekaran and Bougie (2011), a sample is a subset of a population. Meanwhile, according to Cooper and Schindler (2014), a sample is a group of cases, participants, events, or records comprising a target population, carefully selected to represent that population. This study used a non-probability sampling technique with a purposive sampling approach, namely a sampling technique in research according to predetermined criteria and the researcher's considerations based on the following criteria:

1. Manufacturing companies consistently listed on the Indonesia Stock Exchange (IDX) for the 2021-2025 period.
2. Manufacturing companies with complete and consistent ESG score data for the 2021-2025 period.

**Data Analysis Methods**

This study uses a quantitative data analysis method with *the Eviews* 12 program data testing tool. This study uses descriptive statistical analysis to describe and understand the effects of ESG, liquidity, leverage, and firm size on company value in manufacturing companies listed on the Indonesia Stock Exchange for the 2021-2025 period.

**1. Descriptive Statistics**

Descriptive statistics is the science of organizing data without drawing conclusions. This data is organized in various formats, including tables, figures, graphs, and others. Neolaka (2016) defines descriptive statistics as follows: "Descriptive statistics: procedures used to summarize and present sample or population data."

**2. Classical Assumption Test**

This type of test is used to verify the validity of the regression model assumptions applied in this study. The classical assumption test is used to ensure the absence of multicollinearity, autocorrelation, and heteroscedasticity in the model, as well as to ensure the resulting data is normally distributed. Tests for deviations from the classical assumptions include:

**a. Normality Test**

According to Ghozali (2021), the normality test aims to verify that the regression model and the confounding variables or residuals have a normal distribution. The Jarque-Bera statistical test is used to detect normality by observing the profitability sym. sign. (p-value) figure. If the P-value is > 0.05, the hypothesis is accepted, meaning the data is normally distributed. If the P-value is <0.05, the hypothesis is rejected, meaning the data is not normally distributed.

**b. Multicollinearity Test**

According to (Maulid, 2022), this test aims to determine whether the regression model created has a relationship between the independent variables and the dependent variable. If the correlation coefficient value is >0.80 and the VIF value is >10, then multicollinearity is present. Conversely, if the correlation coefficient value is <0.80 and the VIF value is <10, then multicollinearity does not occur between the independent variables.

**c. Heteroscedasticity Test**

Ghozali (2021) stated that the test conducted to determine whether the regression model found unequal variances from the residuals of one observation to another. Heteroscedasticity testing in this study was conducted using the Glejser test. If the probability is significant above the confidence level > 0.05, it is concluded that there is no heteroscedasticity.

**d. Autocorrelation Test**

The autocorrelation test aims to test whether in a linear regression model there is a correlation between the nuisance error in period t and the nuisance error in the previous period t-1 (Ghozali, 2016). In this study, the Durbin-Watson test (DW test) was used to detect autocorrelation.

**Table 3.1** Durbin Watson Decision Making Results

| Null Hypothesis | Decision | If |
|---|---|---|
| n't any autocorrelation positive | Reject | 0<d<Dl |
| n't any autocorrelation positive | No decision | dL ≤ d ≤ Du |
| n't any autocorrelation negative | Reject | 4 – dL< d < 4 |
| n't any autocorrelation negative | No decision | 4 - dU ≤ d ≤ 4 – Dl |
| There is no positive or negative autocorrelation | Not rejected | dU < d < 4 – Du |

## 3. Panel Data Regression Estimation Testing Classical Assumptions

In this study, the regression method used is panel data regression. Here are three approaches to panel data regression that can be used:

**a. *Common effect model* (CEM)**

*The common effect model* (CEM) is the first-choice approach in panel data regression estimation. This approach is the simplest approach, simply combining *time series* and *cross-sectional data* . The method used in *the common effect model* (CEM) approach to estimate panel data regression models is *ordinary least squares* (OLS). The equation for *the common effect model* (CEM) approach is as follows:

$$Y_{it} = a + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}$$

**b. Fixed Effect Model (FEM)**

*The Fixed Effect Model* (FEM) is a panel data regression model that assumes that the intercept can change for each individual and over time, and that the *time series* has fixed properties for each *cross-sectional unit* . The equation for *the Fixed Effect Model* (FEM) is as follows:

$$Y_{it} = a + \beta_1 X_{1it} + a_{1it} + \beta_2 X_{2it} + a_{2it} + \beta_3 X_{3it} + a_{3it}$$

**c. Random Effect Model (REM)**

*The random effects model* (REM) is the third approach used in panel data regression estimation. This approach estimates the presence of disturbance variables that are likely to be interrelated across time and between companies. The methods used in the *random effects model* (REM) approach to estimating panel data regression models are *the error component model* (ECM) or *generalized least squares (GLS). The equation for the random effects model (REM)* approach is as follows:

$$Y_{it} = a + \beta_1 X_{1it} + \varepsilon_{it} = U_i + W_{it}$$

Information:

Ui = *Error cross section*

Vt = *Error time series*

Wit = Combined *error*

**4. Panel Data Model Test**

**a. Chow Test**

The Chow test is used to analyze the model approach used, whether *the Common Effect Model* or *the Fixed Effect Model* . The formula used is as follows:

$$\text{CHOW} = \frac{(RRSS - URSS)/\text{N} - 1}{URSS/(NT - N - K)}$$

Information :

RRSS : *restricted residual sum square*

URSS : *unrestricted residual sum square*

N : number of *cross section* data

T : amount of *time series* data

K : amount variables explanation

Hypothesis :

Ho : *Common Effect Model*

H1 : *Fixed Effect Model*

Test Criteria:

Fcount > Ftable Ho is rejected

If Ho is rejected, then the appropriate approach to use is *fixed effects. model* . Conversely, if Ho is accepted, the appropriate approach to use is *the Common Effect Model* .

**b. Hausman test**

The Hausman test is a test carried out to analyze the approach model to be used between the Fixed Effect Model or the Random Effect Model.

Hypothesis:

Ho = *Random Effect Model*

H1 = *Fixed Effect Model*

Test Criteria:

prob.chi-square statistic < real rate (α), then Ho is rejected probability chi-square statistic > real rate (α), then Ho is accepted. If Ho is rejected then the approach that will be used is *the Fixed Effect Model* . Conversely, if Ho is accepted then the approach that will be used is *the Random Effect Model* .

**c. Lagrange Multiplier (LM) Test**

The Lagrange Multiplier (LM) test is a test carried out to analyze the approach model to be used between *the Common Effect Model* or *Random Effect Model* .

Hypothesis:

Ho : *Common Effect Model*

H1 : Random Effect Model

The LM test is based on the chi-square distribution with *degrees of freedom* (df) equal to the number of independent variables in the model. If the LM value is less than the chi-square value in the table, then Ho is accepted. The model used is *Ordinary Least Squares* (OLS). However, if the LM value is greater than the chi-square value in the table, then Ho is rejected. The model used is *the Random Effects Model* .

**5. Hypothesis Testing**

After obtaining the values from the classical assumption test and declaring them acceptable, the next step is hypothesis testing. The results of the hypothesis test will be used to draw conclusions about the relationship between the independent and dependent variables.

The following are three tests that will be carried out in hypothesis testing:

**a. F test**

The F-statistic test was conducted to demonstrate that all independent variables included in the model have a joint influence on the dependent variable (Ghozali, 2018). In this study, the significance level used was 0.005 (5%). The following are the requirements for the F-test:

1) If the F test is <0.05, then H0 is rejected and Ha is accepted. This means that simultaneously the independent variables have a significant influence on the dependent variable.
2) If the F test > 0.05, then H0 is accepted and Ha is rejected. This means that simultaneously the independent variables do not have a significant effect on the dependent variable.

**b. R Test of Determination Coefficient ( $R^2$)**

According to Ghozali (2021), the coefficient of determination ( $R^2$) aims to measure the extent to which a model is able to explain dependent variables. The value is $R^2$between 0 and 1.$R^2$ the closer it is to 0.0, the more limited the ability of the independent variables to explain the dependent variable, and if the value $R^2$is closer to 1.0, it indicates that the independent variables are able to explain the dependent variable.

**c. Partial Test (t-Test)**

A partial test is conducted to determine whether the independent variables will partially or individually influence the dependent variable. This study used a significance level of 0.05 (5%).

The following are the provisions for the t-test by looking at the Coefficients table:

1) If the t-test > 0.05, then H0 is accepted and Ha is rejected. This means that the independent variable does not have a partial effect on the dependent variable.
2) If the t-test is <0.05, H0 is rejected and Ha is accepted. This means that the independent variable has a partial effect on the dependent variable.

**6. Multiple Regression Analysis**

Multiple regression analysis is an analytical technique used to predict the value of an independent variable against a dependent variable (Sarwono, 2015). To identify the direction and impact of the independent variable, multiple linear regression is used when there is more than one independent or dependent variable. The hypothesis in this study analyzes the relationship between two or more independent variables and one dependent variable. The panel data regression model equation is as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + e$$

Where:

Y = Company Value
i = cross section data (company data)
t = time series data (time period data)
α = constant (intercept)
$\beta$ 1, $\beta$ 2, $\beta$ 3 = regression coefficients
$X$ 1 = ESG
$X$ 2 = Liquidity
$X$ 3 = Leverage
$X$4 = Firm Size
$e$ = Error

## RESULTS AND DISCUSSION

**Research result**

1. **Descriptive Statistical Analysis**

Descriptive statistical analysis aims to describe data that can be seen from the average value (mean), variance, maximum, minimum, sum, average, range, kurtosis, and skewness (Ghozali, 2021). In this study, descriptive statistics are used to interpret the values for four independent variables: the ESG variable measured using the ESG Risk Score (X1), the Liquidity variable measured using CR (X2), the *Leverage variable* measured using DER (X3), and *the Firm Size variable* measured using Ln Total Assets (X4), for the dependent variable, namely Company Value measured using PBV (Y). The results of the descriptive statistical analysis of this study are presented in detail as follows:

**Table 4.1** Descriptive Statistics Results

| | PBV | ESG | QR | DER | SIZE |
|---|---|---|---|---|---|
| Mean | 3.439394 | 24.01050 | 2.639401 | 0.747145 | 28.72857 |
| Median | 1.803833 | 23.60500 | 2.131887 | 0.565456 | 30.02591 |
| Maximum | 44.85702 | 44.73000 | 10.49789 | 6.465892 | 40.78679 |
| Minimum | 0.000351 | 10.73000 | 0.122829 | 0.102351 | 20.35752 |
| Std. Dev. | 6.282487 | 7.316866 | 1.768132 | 0.784182 | 3.830324 |
| Skewness | 4.805243 | 0.562261 | 1.856056 | 3.668834 | -0.253445 |
| Kurtosis | 27.69427 | 3.044788 | 7.377453 | 22.69006 | 3.708440 |
| | | | | | |
| Jarque-Bera | 4681.124 | 8.443694 | 219.6124 | 2943,598 | 5.058827 |
| Probability | 0.0000000 | 0.014672 | 0.000000 | 0.000000 | 0.079706 |
| | | | | | |
| Sum | 550.3030 | 3841.680 | 422.3042 | 119.5433 | 4596.571 |
| Sum Sq. Dev. | 6275.674 | 8512.307 | 497.0804 | 97.77560 | 2332.750 |
| | | | | | |
| Observations | 160 | 160 | 160 | 160 | 160 |

Source: Processed data with Eviews 12, 2026

The data in table 4.1 average (mean) is the sum of the values of all data divided by the number of data, while the maximum is the largest value of a series of studies, and the minimum is the smallest value of a series of studies, then the standard deviation is a measurement of how widely the values deviate from the average value data (mean). The following are some results from table 4.1 obtained as follows:

a. Company Value (Y)

The results of descriptive statistical analysis on Company Value (Y), from data measured by Price to Book Value (PBV) show an average value (mean) of 3.439394 with a standard deviation of 6.282487. The standard deviation value is greater than the average value, so that the company value variable data measured by PBV is homogeneous and fluctuates highly. While the minimum value is 0.000351 and the maximum is 44.85702, meaning that investors are increasingly giving confidence to

the company's prospects as measured by Price to Book Value (PBV) in the range of 0.000351 to 44.85702.

b. *Environmental , Social, and Governance* (ESG) (X1)
The results of descriptive statistical analysis on ESG (X1), from data measured by the ESG Risk Score (ESG Score) show an average value (mean) of 24.01050 with a standard deviation of 7.316866. The standard deviation value is smaller than the average value, so that the ESG variable data measured by the ESG Score is homogeneous and fluctuates low. Meanwhile, the minimum value of 10.73000 and the maximum of 44.73000, means that the company is considered not optimal in implementing sustainability practices and corporate governance as measured by the ESG Risk Score (ESG Score) in the range of 10.73000 to 44.73000.

c. Liquidity (X2)
The results of descriptive statistical analysis on liquidity (X2), from data measured by the Current Ratio (CR) show an average value (mean) of 2.639401 with a standard deviation of 1.768132. The standard deviation value is smaller than the average value, so that the liquidity variable data measured by the Current Ratio (CR) is homogeneous and fluctuates low. While the minimum value is 0.122829 and the maximum is 10.49789, meaning that the company's ability to pay debts as measured by the Current Ratio (CR) is in the range of 0.122829 to 10.49789.

d. Leverage (X3 )
The results of descriptive statistical analysis on leverage (X3), from data measured by the Debt to Equity Ratio (DER) show an average value (mean) of 0.747145 with a standard deviation of 0.784182. The standard deviation value is greater than the average value, so that the leverage variable data measured by the Debt to Equity Ratio (DER) is heterogeneous and fluctuates highly. While the minimum value is 0.102351 and the maximum is 6.465892, meaning that the sample companies in using funds from debt or loans as measured by the Debt to Equity Ratio (DER) are in the range of 0.102351 to 6.465892.

e. Firm Size (X4 )
The results of descriptive statistical analysis on firm size (X4), from data measured by Ln Total Assets (SIZE) show an average value (mean) of 28.72857 with a standard deviation of 3.830324. The standard deviation value is smaller than the average value, so that the firm size variable data measured by Ln Total Assets (SIZE) is homogeneous and fluctuates low. While the minimum value is 20.35752 and the maximum is 40.78679, meaning that the size of the sample companies measured by Ln Total Assets (SIZE) is in the range of 20.35752 to 40.78679.

**2. Analysis Quantitative**

Analysis quantitative in study This done with Analysis Panel Data Regression with using Eviews 12 software . Stages data processing carried out that is :

**a. Determining Panel Data Regression Model Estimates**

### i. *Common Effect Model* (CEM)

**Table 4.2** CEM Test Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.725763 | 2.707386 | 0.268068 | 0.7890 |
| ESG | -0.105692 | 0.046701 | -2.263186 | 0.0250 |
| CR | 0.595023 | 0.205433 | 2.896438 | 0.0043 |
| DER | 6.196501 | 0.473372 | 13.09014 | 0.0000 |
| SIZE | -0.033028 | 0.087346 | -0.378123 | 0.7059 |
| R-squared | 0.573272 | Mean dependent var | | 3.439394 |
| Adjusted R-squared | 0.562260 | SD dependent var | | 6.282487 |
| SE of regression | 4.156615 | Akaike info criterion | | 5.718031 |
| Sum squared residual | 2678.005 | Schwarz criterion | | 5.814130 |
| Log likelihood | -452.4424 | Hannan-Quinn criter. | | 5.757053 |
| F-statistic | 52.05729 | Durbin-Watson stat | | 0.624258 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Processed data researcher, 2026

### ii. *Fixed Effect Model* (FEM)

**Table 4.3** FEM Test Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.725763 | 2.499474 | 0.290366 | 0.7719 |
| ESG | -0.105692 | 0.039690 | -2.662934 | 0.0086 |
| CR | 0.595023 | 0.213140 | 2.791695 | 0.0059 |
| DER | 6.196501 | 1.144473 | 5.414282 | 0.0000 |
| SIZE | -0.033028 | 0.062075 | -0.532060 | 0.5954 |
| Effects Specification | | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.573272 | Mean dependent var | | 3.439394 |
| Adjusted R-squared | 0.562260 | SD dependent var | | 6.282487 |
| SE of regression | 4.156615 | Akaike info criterion | | 5.718031 |
| Sum squared residual | 2678.005 | Schwarz criterion | | 5.814130 |
| Log likelihood | -452.4424 | Hannan-Quinn criter. | | 5.757053 |
| F-statistic | 52.05729 | Durbin-Watson stat | | 0.624258 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Processed data researcher, 2026

### iii. *Random Effect Model* (REM)

**Table 4.4** REM Test Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 1.629108 | 2.491347 | 0.653907 | 0.5141 |
| ESG | -0.043631 | 0.030773 | -1.417833 | 0.1582 |
| CR | 0.081741 | 0.210247 | 0.388786 | 0.6980 |
| DER | 2.392952 | 0.497737 | 4.807665 | 0.0000 |
| SIZE | 0.029735 | 0.075196 | 0.395435 | 0.6931 |
| **Effects Specification** | | | | |
| | | | **Elementary School** | **Rho** |
| Random cross-section | | | 3.175242 | 0.6934 |
| Idiosyncratic random | | | 2.111610 | 0.3066 |
| **Weighted Statistics** | | | | |
| R-squared | 0.124273 | Mean dependent variable | | 0.980459 |
| Adjusted R-squared | 0.101673 | SD dependent var | | 2.537263 |
| SE of regression | 2.404820 | Sum squared residual | | 896.3897 |
| F-statistic | 5.498932 | Durbin-Watson stat | | 1.027264 |
| Prob(F-statistic) | 0.000363 | | | |
| **Unweighted Statistics** | | | | |
| R-squared | 0.363800 | Mean dependent var | | 3.439394 |
| Sum squared residual | 3992,586 | Durbin-Watson stat | | 0.230635 |

Source: Processed data researcher, 2026

### 3. Selecting a Panel Data Regression Model

Determine the most appropriate estimation model to use in the panel data regression model by carrying out the following tests:

#### a. Chow Test

This test was conducted to select the most appropriate estimation model to use between the Common Effect model estimation and the Fixed Effect model estimation in the panel data regression equation model. The results of the Chow test are shown in Table 4.5 below.

**Table 4.5** Chow Test Results

| Effects Test | Statistics | df | Prob. |
|---|---|---|---|
| Cross-section F | 15.374133 | (31,124) | 0.0000 |
| Cross-section Chi-square | 252.423112 | 31 | 0.0000 |

Source: Processed data researcher, 2026

Table 4.5 shows that the p-value of the Cross-section Chi-square obtained is 0.0000, which is smaller than the significance level (α) of 0.05. Therefore, it can be concluded that *the Fixed Effect Model* (FEM) is a more appropriate estimation model to use compared to *the Common Effect Model* (CEM).

#### b. Hausman test

This test was conducted to select the most appropriate estimation model to use between the fixed effect model estimation and the random effect model estimation in the panel data regression equation model. The results of the Hausman test are shown in Table 4.6 below.

**Table 1**Hausman Test Results

| Test Summary | Chi-Sq. Statistic | Chi-Sq. df | Prob. |
|---|---|---|---|
| Random cross-section | 50.033985 | 4 | 0.0000 |

Source: Processed data researcher, 2026

Table 4.6 shows that the p-value obtained for the random cross-section is 0.1113, which is greater than the significance level (α) of 0.05. This means that *the Random Effect Model* (REM) is a more appropriate estimation model than *the Fixed Effect Model* (FEM).

**4. Classical Assumption Test**

The selected panel data regression estimation model is the Fixed Effect Model (FEM). Therefore, based on Table 4.3, the classical assumption tests used for the FEM model are multicollinearity and heteroscedasticity tests.

**a. Multicollinearity Test**

The multicollinearity test used in this study aims to determine whether the data intercollinearity between the independent variables (X). To test whether the variables exhibit multicollinearity symptoms, the researcher used the Glejser test. This test determines the presence of correlation.

**Table 2**Multicollinearity Test Results

| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
|---|---|---|---|
| C | 405.3668 | 3636.603 | NA |
| ESG | 7.49E-10 | 3600.763 | 1.008172 |
| CR | 0.042992 | 3.885064 | 1.198223 |
| DER | 0.219933 | 2.307134 | 1.205726 |
| SIZE | 0.007701 | 58.02841 | 1.007293 |

Source: Processed data researcher, 2026

Based on table 4.7, the VIF value is <10 so there are no symptoms of multicollinearity.

**b. Heteroscedasticity Test**

The heteroscedasticity test is performed to determine whether the model exhibits unequal variances from residuals from one observation to another. The results of the heteroscedasticity test are shown in the table below.

**Table 3**Heteroscedasticity Test Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 2.936990 | 3.096819 | 0.948390 | 0.3448 |
| ESG | -0.057134 | 0.021270 | -2.686179 | 0.0082 |
| CR | 0.056082 | 0.110110 | -0.509326 | 0.6114 |
| DER | -0.995915 | 1.886928 | -0.527797 | 0.5986 |
| SIZE | 0.067846 | 0.056722 | 1.196126 | 0.2339 |
| **Effects Specification** | | | | |
| **Cross-section fixed (dummy variables)** | | | | |
| R-squared | 0.857283 | Mean dependent var | | 2.622185 |
| Adjusted R-squared | 0.817000 | SD dependent var | | 4.265150 |
| SE of regression | 1.824566 | Akaike info criterion | | 4.235669 |
| Sum squared residual | 412.8012 | Schwarz criterion | | 4.927583 |
| Log likelihood | -302.8535 | Hannan-Quinn criter. | | 4.516632 |
| F-statistic | 21.28153 | Durbin-Watson stat | | 1.166450 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Processed data researcher, 2026

Table 4.8 shows that results study with using the Glejser test all over prob.Chi - Square variable independent more big from significance α = 0.05. Therefore, it can be concluded that there are no symptoms of heteroscedasticity in the regression model.

**c. Autocorrelation Test**

The autocorrelation test aims to determine whether a linear regression model has a correlation between the error of a confounding variable in a given period and the error of the previous variable. This study uses the Durbin-Watson test to determine the presence or absence of autocorrelation. The results of the autocorrelation test are shown in the table below.

**Table 4**Autocorrelation Test Results

| | | | |
|---|---|---|---|
| R-squared | 0.400339 | Mean dependent var | 2.14E-15 |
| Adjusted R-squared | 0.376822 | SD dependent var | 4.169687 |
| SE of regression | 3.291617 | Akaike info criterion | 5.263399 |
| Sum squared residual | 1657,716 | Schwarz criterion | 5.397938 |
| Log likelihood | -414.0719 | Hannan-Quinn criter. | 5.318031 |
| F-statistic | 17.02400 | Durbin-Watson stat | 1.925280 |
| Prob(F-statistic) | 0.000000 | | |

Source: Processed data researcher, 2026

Based on the results in table 4.9, the Durbin Watson result is 1.925280. The research results refer to the Durbin Watson criteria, namely: DW value = 1.925280, dL = 1.6238 and dU = 1.74113, so because the dL value < DW < dU = 1.6238 < 1.925280 < 1.74113, so the results of the test value do not experience autocorrelation.

## 5. Hypothesis Testing

**Table 4.5**Analysis Test Results Regression Model (F-Test Results, R-square Test Results, and t-Test Results)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.725763 | 2.499474 | 0.290366 | 0.7719 |
| ESG | -0.105692 | 0.039690 | -2.662934 | 0.0086 |
| CR | 0.595023 | 0.213140 | 2.791695 | 0.0059 |
| DER | 6.196501 | 1.144473 | 5.414282 | 0.0000 |
| SIZE | -0.033028 | 0.062075 | -0.532060 | 0.5954 |
| **Effects Specification** | | | | |
| **Cross-section fixed (dummy variables)** | | | | |
| R-squared | 0.573272 | Mean dependent var | | 3.439394 |
| Adjusted R-squared | 0.562260 | SD dependent var | | 6.282487 |
| SE of regression | 4.156615 | Akaike info criterion | | 5.718031 |
| Sum squared residual | 2678.005 | Schwarz criterion | | 5.814130 |
| Log likelihood | -452.4424 | Hannan-Quinn criter. | | 5.757053 |
| F-statistic | 52.05729 | Durbin-Watson stat | | 0.624258 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Processed data researcher, 2026

The following are three tests that will be carried out in hypothesis testing:

**a. Simultaneous Significance Test (F Test)**

Based on the table above, the model has an F-value of 52.05729 with a Prob(F-statistic) of 0.000000. This significance value is <0.05, indicating that environmental, social, and governance (ESG), liquidity, leverage, and firm size variables simultaneously have a significant effect on firm value. Therefore, the regression model in this study can be said to be simultaneously significant.

**b. Coefficient of Determination Test**

Based on the table, the Adjusted R-Square value is 0.562260. This indicates that the percentage contribution of the influence of the independent and dependent variables is 56.22%, and 43.88% is influenced by other variables outside the regression model.

**c. t-test**

The results of the t-test in table 4.10 in the model are explained as follows:

i. *Environmental, Social, and Governance* (ESG) negatively impacts firm value. The t-test results show a regression coefficient of -0.105692 and a t-statistic of -2.662934, with a probability of 0.0086 <0.05. This indicates that ESG has a significant negative impact on firm value.

ii. Liquidity (CR) has a positive effect on firm value. The t-test results show a regression coefficient of 0.595023 and a t-statistic of 2.791695, with a

probability of 0.0059 <0.05. This indicates that liquidity has a significant positive effect on firm value.

iii. Leverage (DER) has a positive effect on firm value. The t-test results show a regression coefficient of 6.196501 and a t-statistic of 5.414282, with a probability value of 0.0000 <0.05. This indicates that leverage has a significant positive effect on firm value.

iv. Firm size (SIZE) negatively impacts firm value. The t-test results show a regression coefficient of -0.033028 and a t-statistic of -0.532060, with a probability value of 0.5954 > 0.05. This indicates that firm size does not significantly impact firm value.

**6. Model Interpretation**

The model formed in this study with the panel data regression equation is as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + e$$

$Y_{it}$= 0.725763 + (-0.105692) $X_{1it}$+ 0.595023 $X_{2it}$+ 6.196501 $X_{3it}$+ (-0.033028) $X_{4it}$+ $e$

Where Y represents firm value, X1 represents ESG, X2 represents liquidity, X3 represents *leverage* , X4 represents *firm size*

**The Influence of Environmental, Social, and Governance (ESG) on Company Value**

The first hypothesis, ESG, shows a significant negative effect on firm value, as evidenced by the significance value of the ESG risk score. Therefore, it can be concluded that H1 in this study, which states that ESG has a negative effect on firm value, is rejected because it does not align with the direction of the proposed hypothesis, and therefore, ESG is declared to have no significant effect.

According to descriptive statistics, the average ESG risk score for 32 companies from 2021 to 2025 was 23.40556, indicating that these companies are considered to have moderate risk, indicating that several ESG issues need to be better managed to mitigate negative ESG impacts. Based on the ESG risk score, a score of 20-30 falls within the medium risk category, indicating that the company has moderate ESG risk exposure and adequate risk management. This is in line with research (Sari & Valdiansyah, 2025) which states a significant negative impact on company value.

The implementation of ESG has not been able to improve market perception of companies, and investors rely on it as the sole indicator for investment decisions. ESG implementation also prioritizes full operational and financial efficiency to ensure sustainability truly adds value. Furthermore, investors have not yet viewed ESG as a signal of a company's or issuer's health when making investment decisions, which typically involve both fundamental and technical factors.

**The Effect of Liquidity on Company Value**

The second hypothesis, liquidity, has a significant positive effect on firm value. H2, which states that liquidity has a positive effect on firm value, is accepted. Liquidity is a ratio used to assess a company's ability to pay its short-term obligations by quickly converting its assets into cash. In this study, liquidity did not significantly influence firm value.

This indicates that investors consider not only a company's ability to meet short-term needs but also its ability to generate profits and improve future growth prospects. The research findings align with those of Ferdila et al. (2023), who explain that companies with high liquidity can increase their value because investors rely on their assessment of the company's development. This positive effect aligns with signaling theory, which states that a high level of liquidity serves as a positive signal to the market regarding a company's financial condition.

A company with sufficient current assets to cover its current liabilities is considered to have a lower financial ratio. This situation encourages investors to invest, as the company is considered stable and has good future prospects.

**The Effect of Leverage on Company Value**

The third hypothesis, Leverage, has a significant positive effect on firm value. H3, which states that leverage has a significant positive effect, is accepted. Leverage reflects the extent to which a company uses debt to finance operational and investment activities. The research results align with (Carolin & Susilawati, 2024), who explain that debt is used as an additional funding source for business development.

Based on signaling theory, the use of debt can be a positive signal sent by a company to investors. Companies that boldly use debt are perceived as having good growth prospects and confidence in their ability to generate future cash flow. This signal can increase investor confidence in the company's performance and prospects. Furthermore, funds obtained from debt can also be used for business expansion or increased operational capacity, thereby bolstering investor confidence. Therefore, optimally managed debt can increase company value by increasing investment capacity and sending a positive signal to the market.

**The Influence of Firm Size on Company Value**

The fourth hypothesis, firm size, shows no significant effect on firm value. H4, which states that firm size has no significant effect, is rejected. Firm size provides an indication of a company's size, as measured by its total assets. The results show that the coefficient for firm size is negative, but this effect does not align with the proposed hypothesis. This indicates that the size of a company's assets has not significantly influenced firm value.

This is in line with research conducted by (Diantimala et al., 2021), which states that larger companies do not necessarily provide higher returns to investors. When making investment decisions, investors tend to pay more attention to a company's financial performance than its assets. Furthermore, larger companies may face higher operational and management costs and potentially less efficient asset utilization.

On the other hand, companies with large assets tend to have greater funding needs, so that in some conditions this can cause investor concerns due to financial distress in managing complex resources, such as human resources, finance, technology and the company's reputation.

This complexity can increase operational risk, so the market does not always place a higher value on larger companies. Some investors are also more attracted to smaller companies still in their growth phase because they are perceived as having greater expansion opportunities and

potential for future value increases. Therefore, company size is not a primary factor investors consider when valuing a company.

## CONCLUSION

This study aims to determine the effect of Environmental, Social, and Governance (ESG), liquidity, leverage, and firm size on the value of manufacturing companies listed on the Indonesia Stock Exchange between 2021 and 2025. A sample of 221 companies was selected. Based on the analysis and discussion presented, the following conclusions were drawn: Environmental, Social, and Governance (ESG), proxied by the ESG score, did not significantly influence the value of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2021–2025. Liquidity, proxied by the Current Ratio (CR), had a significant positive effect on the value of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2021–2025. Leverage, proxied by the Debt to Equity Ratio (DER), had a significant positive effect on the value of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2021–2025. Firm size, proxied by ln total assets (FSZ), did not significantly influence the value of manufacturing companies listed on the Indonesia Stock Exchange (IDX) in 2021–2025.

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