

Assessing ESG and Financial Metrics on Firm Valuation in Non-Cyclical IDX Companies 2020-2024

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Abstract

Firm value, often proxied by Price-to-Book Value (PBV), reflects market confidence in future performance. In Indonesia's non-cyclical sector—covering consumer staples, healthcare, and utilities—PBV has experienced volatility between 2020–2024, despite the sector's traditionally stable nature. This study investigates whether financial indicators such as Return on Assets (ROA), Debt-to-Equity Ratio (DER), and firm size have a stronger impact on PBV than non-financial factors like Environmental, Social, and Governance (ESG) performance. Using purposive sampling, 14 listed firms (70 firm-year observations) were analyzed through panel regression with the Fixed Effect Model (FEM), selected via the Hausman test. The findings indicate that DER has a significant positive effect on PBV, underscoring the importance of capital structure in driving firm valuation. Conversely, ESG score, ROA, and firm size show no significant influence, suggesting that investors in non-cyclical industries continue to prioritize leverage over sustainability or profitability indicators. The study recommends that firms strengthen capital structure management and improve disclosure quality to ensure sustainability efforts are more effectively integrated into valuation. Limitations include a small sample, reliance on secondary ESG data, and a short observation period, suggesting future studies should expand both scope and variables.

Keywords: ESG, PBV, ROA, DER, Firm Size, Non-Cyclical, Indonesia

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Introduction

In an era of growing global concern over sustainability, investors and regulators are increasingly embedding Environmental, Social, and Governance (ESG) criteria into valuation frameworks (KPMG, 2022). Academic research and market evidence have generally found that firms with strong ESG performance tend to attract responsible capital and command valuation premiums. For example, Fatemi et al. (2018) show that ESG strengths tend to increase firm value, whereas ESG weaknesses reduce it, with disclosure quality moderating the effect. Similarly, Friede et al. (2015) a meta-analysis of more than 2,000 studies and found that approximately 90% report a nonnegative relationship between ESG and corporate financial performance, with the majority indicating a positive association. One conventional valuation metric often used in this context is the **Price-to-Book Value (PBV)** ratio, which reflects market expectations of a firm's future profitability, growth, and risk exposure.

Non-cyclical sectors—such as consumer staples, healthcare, telecommunications, and utilities—are relatively insulated from macroeconomic downturns, as demand for their products or services remains stable. This earnings stability makes them particularly suitable for studying long-term value drivers beyond financial performance and for examining the influence of nonfinancial factors such as ESG performance (Eccles et al., 2014). In these industries, PBV is shaped not only by traditional financial determinants—such as Return on Assets (ROA), Debt-to-Equity Ratio (DER), and firm size—but also increasingly by sustainability practices that signal reduced long-term risks and stronger governance structures (C. J. Chen & Chen, 2011; D. Chen et al., 2020; Fama & French, 1998)

However, PBV trends among Indonesian non-cyclical firms during the 2020–2024 period highlight important challenges. Despite their relative stability, several companies in this sector experienced volatile and, in some cases, declining PBV ratios, reflecting weak investor confidence in long-term value creation Pramana & Rachmawati (2022) While some large-cap consumer goods firms maintained PBV multiples above market averages, many mid-sized and smaller companies struggled to attract premium valuations, even when reporting compliance with sustainability disclosure requirements (Sari & Ardiyanto, 2021) This phenomenon suggests that ESG initiatives, although mandated by regulators, may not yet consistently translate into tangible valuation benefits for non-cyclical firms. Instead, investors appear to rely more heavily on conventional financial signals such as profitability and leverage when determining firm value.

Indonesia, as an emerging market, has made notable progress in integrating sustainability into its financial system. The Financial Services Authority (OJK) issued Regulation No. 51/POJK.03/2017, which mandated sustainability reporting for all listed companies beginning in 2020. By April 2021, approximately 88% of IDX-listed companies had submitted sustainability reports (Cekindo, 2021) reflecting strong compliance. More recently, in 2025, OJK introduced the Indonesia Sustainable Finance Taxonomy Version 2, which provided more detailed classifications and guidelines for channeling investment toward environmentally and socially responsible sectors (OJK, 2024, 2025)

Despite these policy advances, the ESG phenomenon in Indonesian non-cyclical firms from 2020 to 2024 underscores several persistent challenges. While most companies disclosed sustainability reports, the quality and consistency of these disclosures varied significantly, with many focusing on regulatory compliance rather than substantive performance (Siregar & Utama, 2020). Moreover, domestic investors continued to prioritize financial indicators—such as profitability and capital structure—over ESG metrics, thereby limiting the influence of ESG performance on PBV (Sulistrawati & Ratmono, 2023) This indicates that, although ESG reporting is expanding, its integration into market valuation remains limited in Indonesia. Accordingly, this research seeks to address that gap by analyzing the impact of ESG score, firm size, DER, and ROA on PBV among non-cyclical industry companies publicly traded on the Indonesian Stock Exchange (IDX) between 2020 and 2024. Using panel data regression models, this study examines whether ESG scores meaningfully contribute to PBV beyond conventional financial metrics.

In this study, ESG variables represent indicators of a company's sustainability performance across environmental, social, and governance dimensions, such as climate impact, labor practices, community engagement, and governance quality. From a theoretical perspective, stakeholder theory (Freeman, 1984) suggests that firms balancing the interests of diverse stakeholder groups—not just shareholders—can achieve sustainable growth and higher valuation. Empirical studies support this notion: Fatemi et al. (2018) show that well-communicated ESG initiatives enhance firm value, while Friede et al. (2015) report that the majority of studies confirm a positive ESG–financial performance link. In Indonesia, (A. Hermawan et al., 2021; M. Hermawan et al., 2021) found that ESG transparency improves firm value by reducing information asymmetry and strengthening investor confidence. Particularly in non-cyclical sectors such as consumer goods, healthcare, and utilities, credible ESG

practices can influence consumer trust, enhance brand reputation, and ensure regulatory resilience—factors that underpin long-term value creation (Vania & Tannia., 2025).

Despite strong evidence in developed markets, ESG's impact in emerging economies remains underexplored and context-dependent. Bagh et al. (2024) argue that regulatory enforcement, investor awareness, and cultural norms shape ESG's effectiveness, while Chen & Chen (2011) highlight governance quality and financial leverage as important moderating factors. Recent studies emphasize the value of sector-specific ESG indicators over standardized scores, with Kotsantonis and Pinney (2022) finding materiality-adjusted metrics to be stronger predictors of firm value. International research reinforces these findings, showing varying ESG–valuation dynamics: Zumenta et al. (2022) demonstrate ESG's value relevance in OECD banks, Yang et al. (2022) identify diminishing returns from excessive ESG spending in U.S. firms, and Alfraih and Almutairi (2023) highlight the role of leadership in maximizing ESG benefits for FTSE 350 companies.

H1: ESG Score (X1) has a positive and significant effect on Price to Book Value (Y).

This study extends prior research by examining the relationship between ESG performance and firm value, measured by Price-to-Book Value (PBV), in Indonesia's non-cyclical industries, while incorporating Return on Assets (ROA), Debt-to-Equity Ratio (DER), and firm size as control variables. PBV captures market expectations of a company's profitability and growth potential, and firm size serves as a critical determinant of valuation. Resource-based theory (Barney, 1991) argues that larger firms gain competitive advantages through access to resources, capital, and transparency, increasing investor confidence (Fama & French, 1998). However, prior studies present mixed findings: while Nuraini and Mulyadi (2020) report a positive size–valuation link, Chen and Chen (2011) caution that excessive size may lead to inefficiencies and reduced firm value.

Business scale, often represented by total assets or market cap, is widely used as a proxy for firm stability and operational capacity. According to resource-based theory, larger firms possess more strategic assets—such as human capital, networks, and technology—that can be used to generate competitive advantage (Barney, 1991). Larger firms also benefit from greater analyst coverage, easier access to capital markets, and higher transparency—all of which can enhance investor confidence and increase firm valuation (Fama & French, 1998). Furthermore, in non-cyclical industries, larger firms tend to dominate market share and maintain pricing power, which reinforces their long-term valuation.

However, empirical evidence shows mixed results. While some studies (R. Nuraini & Mulyadi, 2020) find a positive correlation between firm size and firm value, others suggest that excessive size can lead to bureaucracy and inefficiency (Chen & Chen, 2011). Thus, the relationship may be context-specific and moderated by industry characteristics.

H2: Company Size (X2) has a positive and significant effect on Price to Book Value (Y).

The Debt to Equity Ratio (DER) is a crucial measure of financial leverage as it reflects the proportion of debt relative to equity used in financing a firm's operations. According to the capital structure theory of Modigliani and Miller (1958), in a perfect market with no taxes, transaction costs, or bankruptcy costs, capital structure does not affect firm value. However, in practice, excessive leverage heightens financial risk and increases the probability of financial distress, which may undermine investor confidence. Empirical evidence supports this argument. Chen and Chen (2011) found that in capital-intensive industries, high reliance on debt reduces firm value due to concerns over repayment capacity. Similarly, Pratiwi and Sari (2020) reported a negative relationship between DER and firm value in Indonesian manufacturing companies, indicating that greater leverage tends to reduce market valuation.

Further evidence from Indonesian studies reinforces this view. Kammagi and Veny (2023) emphasized that capital structure, along with profitability, firm size, and growth, significantly influences firm value. Likewise, Budidarma (2021) showed that leverage, when considered together with profitability and corporate social responsibility (CSR), has a substantial effect on firm valuation. In the non-cyclical sector, even though earnings are relatively stable, excessive debt may still be perceived negatively, particularly by conservative long-term investors who prioritize financial stability. Moreover, high leverage reduces managerial flexibility in responding to regulatory changes or pursuing ESG-related initiatives, thereby constraining long-term competitiveness and potentially diminishing firm value.

H3: Debt to Equity Ratio (X3) has a significant effect on Price to Book Value (Y).

Return on Assets (ROA) is widely recognized as a central indicator of profitability, reflecting the extent to which firms effectively utilize their assets to generate earnings. From the perspective of agency theory, higher profitability signals efficient managerial performance, which in turn reduces agency costs and enhances firm value (Jensen & Meckling, 1976). A consistently strong ROA demonstrates effective internal control systems and optimal resource allocation, aligning managerial actions with shareholder interests. In the context of non-cyclical industries—such as food, healthcare, and utilities—where margins are generally narrow and growth is relatively stable, ROA assumes greater importance. Investors often place a premium on firms that can maintain profitability under such conditions, as this reflects operational resilience and the ability to generate stable returns over time. Moreover, consistent profitability can be interpreted through signaling theory (Spence, 1973)), where ROA provides a credible signal of managerial competence and long-term sustainability, thereby increasing market confidence and positively influencing firm valuation.

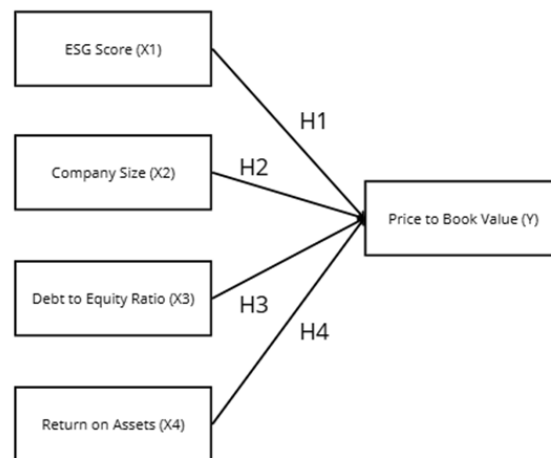
A substantial body of empirical research confirms the role of ROA in determining firm value. In the Indonesian context, Nuraini and Mulyadi (2020) demonstrated that ROA is a significant predictor of firm value, while Putri and Sari (2021) reported a positive and significant association between ROA and price-to-book value (PBV). Similar findings appear in international studies: Al-Tamimi (2010) identified profitability as a key determinant of valuation among GCC firms, while Yahaya and Lamidi (2015) found that higher ROA improves investor perceptions of stability and lowers perceived investment risk. Gill and Mathur (2011) further argued that firms with higher ROA often enjoy stronger valuation multiples because investors expect them to rely more on internally generated funds than external borrowing. More recently, Sherly and Budidarma (2023) provided additional evidence from the Indonesian setting, showing that ROA positively influences firm value when examined alongside environmental management, highlighting its relevance in both financial and sustainability dimensions. Taken together, these studies suggest that consistently high ROA not only enhances PBV but also signals sustainable competitive advantage, prudent governance, and reduced vulnerability to financial distress.

H4: Return on Assets (X4) has a positive and significant effect on Price to Book Value (Y).

Research Paradigm

The research paradigm in Figure 1 illustrates the conceptual framework of this study, showing the relationship between independent variables and the dependent variable. The dependent variable is Price to Book Value (PBV) (Y), which represents the firm's market valuation. The independent variables are ESG Score (X1), Company Size (X2), Debt to Equity Ratio (X3), and Return on Assets (X4).

Figure 1. Research Paradigm



Source: Author's Adaptation based on literature review.

H1 (ESG Score → PBV): This hypothesis is based on stakeholder theory (Freeman, 1984)) and signaling theory. Firms with stronger ESG performance are expected to reduce information asymmetry, build investor confidence, and enhance valuation (Fatemi et al., 2018; Friede et al., 2015)

H2 (Company Size → PBV): Drawing from resource-based theory (Barney, 1991), larger firms typically have more resources, greater market visibility, and stronger investor confidence, which can increase PBV (Fama & French, 1998; I. Nuraini & Mulyadi, 2020)

H3 (DER → PBV): According to capital structure theory (Kraus & Litzenberger, 1973; Modigliani & Miller, 1958) excessive leverage increases financial risk, potentially lowering firm value. Thus, DER is hypothesized to significantly influence PBV (C. J. Chen & Chen, 2011; Pratiwi & Sari, 2020)

H4 (ROA → PBV): From agency theory (Jensen & Meckling, 1976) profitability indicates efficient management and stronger returns, which should increase PBV. Empirical studies confirm that ROA has a positive impact on firm value (Gill & Mathur, 2011; I. Nuraini & Mulyadi, 2020)

Methodology

Research Design

This research utilize a quantitative method in collecting the data with an explanatory (causal-comparative) design, aiming to empirically study the fact that the influence of ESG score, company size, DER, and ROA on PBV. The focus is on Publicly traded non-cyclical firms on IDX that conducted their Initial Public Offering (IPO) between 2020 and 2024.

The non-cyclical sector—covering consumer staples, health care, and utilities—is selected due to its resilience to economic cycles and increasing relevance in sustainable investing. The study investigates how both financial and non-financial variables affect firm valuation, particularly in a post-pandemic economic context where investors increasingly consider ESG factors.

Population and Sample

The population of this study consisted of all non-cyclical firms listed on the IDX between 2020 and 2024. A purposive sampling technique was applied to select firms that met the following criteria: (1) firms operated in the non-cyclical sector (e.g., consumer non-durables, health care, or utilities), (2) conducted an IPO between 2020 and 2024, (3) consistently published complete annual financial reports

during the observation period, and (4) disclosed ESG-related data either through sustainability reports or third-party ratings such as Refinitiv or the IDX ESG Leader list.

Table 1. Sample for this Research

Company Name	Code
PT Indofood CBP Sukses Makmur Tbk	ICBP
PT Indofood Sukses Makmur Tbk	INDF
PT Mayora Indah Tbk	MYOR
PT Delta Djakarta Tbk	DLTA
PT Garudafood Putra Putri Jaya Tbk	GOOD
PT Sentra Food Indonesia Tbk	FOOD
PT Campina Ice Cream Industry Tbk	CAMP
PT Wilmar Cahaya Indonesia Tbk	CEKA
PT Wahana Interfood Nusantara Tbk	COCO
PT Tiga Pilar Sejahtera Food Tbk	AISA
PT Multi Bintang Indonesia Tbk	MLBI
PT Buyung Poetra Sembada Tbk	HOKI
PT Unilever Indonesia Tbk	UNVR
PT Ultra Jaya Milk Industry & Trading Company Tbk	ULTJ

Source: Otoritas Jasa Keuangan, 2025.

Based on these criteria, a total of 14 companies were selected. These companies form a balanced panel dataset spanning five years from 2020 to 2024, resulting in 70 firm years being observed.

Data Collection

This study utilizes secondary data obtained from various reliable sources. The primary sources include annual reports and financial statements of each selected company, as well as sustainability reports and ESG scores derived from official platforms such as the IDX ESG Leader list, Refinitiv ESG Score, or company-specific disclosures. Additional data were collected from official institutions, including the IDX and the Financial Authorities (OJK). To ensure accuracy, all data were collected manually and cross-verified by comparing information across multiple sources. For example, reported financial figures in company annual reports were checked against IDX disclosures and OJK filings to confirm consistency, while ESG-related scores were verified with both Refinitiv and company-specific sustainability reports.

Furthermore, all monetary values were standardized to a common currency (Indonesian Rupiah) using official yearly exchange rates published by Bank Indonesia, and where necessary, values were adjusted for comparability (e.g., converting USD-reported figures into IDR). Relevant financial ratios (such as ROA, ROE, and leverage ratios) were recalculated directly from the raw financial statement data to ensure consistency and to avoid potential discrepancies in how companies report them. This process ensured that the dataset remained uniform, reliable, and analytically comparable across firms and over the study period.

Operational Definition of Variables

Table 2. Operational Variables

Variable	Description	Measurement
PBV	Reflects the amount investors are prepared to pay for every unit of the company's net assets.	Market Price per Share/ Book Value per Share

Variable	Description	Measurement
ESG Score	Measurement of a company's score performance in environmental, social, and governance (ESG) aspects.	Composite score based on the indicator from OJK
ROA	Profitability measure showing management efficiency	Net income / total assets
DER	Financial leverage indicator	Total Liabilities / Total Equity
Company Size	Proxy for firm scale and market dominance	The natural logarithm of a company's total assets, representing firm size (Ln Size).

Resource: Author's compilation based on literature review.

Hypothesis Development

This study examines the influence of financial and non-financial factors—namely ESG Score, Company Size, Debt to Equity Ratio, and Return on Assets—on firm valuation, measured by Price to Book Value (PBV). The hypotheses are formulated as follows:

H1: ESG Score (X1) has a positive and significant effect on Price to Book Value (Y).

H2: Company Size (X2) has a positive and significant effect on Price to Book Value (Y).

H3: Debt to Equity Ratio (X3) has a significant effect on Price to Book Value (Y).

H4: Return on Assets (X4) has a positive and significant effect on Price to Book Value (Y).

Model Specification

This research employs a panel data regression model to account for variations across companies (cross-sectional) and over time (time-series). The general form of the regression equation is presented as follows:

$$PBV_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 Size_{it} + \beta_3 DER_{it} + \beta_4 ROA_{it} + \varepsilon_{it}$$

PBV_{it} = Price to Book Value of company i in year t (Ratio of $\frac{\text{Market Price Per Share}}{\text{Book Value per Share}}$)

ESG_{it} = ESG Score of company i in year t (Score)

$SIZE_{it}$ = Company Size (log total assets) of company i in year t (Logarithm Value)

DER_{it} = Debt to Equity Ratio of company i in year t (Ratio)

ROA_{it} = Return on Assets of company i in year t (Ratio)

α = Intercept

$\beta_1 \dots \beta_4$ = Regression coefficients

ε_{it} = Error term

Estimation Technique

A time-series cross-sectional approach enables researchers to control for unobservable heterogeneity and enhance estimation efficiency. This study considers three main models:

- Pooled Least Squares (PLS): Assumes full homogeneity across companies and over time.
- Fixed Effect Model (FEM): Accounts for individual heterogeneity by assigning a unique intercept to each company.
- Random Effect Model (REM): Assumes individual effects are random and uncorrelated with the regressors.

- Hausman Test: Compares FEM and REM. A p-value < 0.05 indicates FEM

Classical Assumption Tests

Once the best panel model is selected, the following diagnostic tests will be performed to ensure the validity of the regression:

Table 3. Classical Assumption Test

Test	Purpose	Indicator
Multicollinearity Test	Identify strong correlations between predictors that distort regression.	VIF > 10, Tolerance < 0.1, Correlation > 0.8
Heteroscedasticity	Check for unequal variance of errors	Glejser Test or Breusch-Pagan Test
Normality	Verify residual distribution	Jarque-Bera statistic (p > 0.05)

Resource: Author's compilations.

Hypothesis Tests

The following statistical tests are Carried out in this research to analyze the regression model. The F-Test (Simultaneous Test) is used to determine whether all independent variables collectively have a significant effect on Price to Book Value (PBV). In contrast, the t-statistic test assesses the individual impact of each independent variable on PBV. Additionally, The R-squared and adjusted R-squared scores are used to examine to understand how well the model explains the variability in PBV. Lastly, the significance of the regression coefficients is analyzed to interpret the significance and direction of the relationships between the variables.

Result and Discussion

Descriptive Statistic

Table 4 summarizes the descriptive statistics of the variables used in this study: ESG disclosure (ESG), Debt-to-Equity Ratio (DER), Price-to-Book Value (PBV), Return on Assets (ROA), and firm size (SIZE). These statistics describe the central tendency, distribution, and variation of the data, serving as a foundation for interpreting the regression analysis results.

Table 4. Descriptive Statistic

	ESG	DER	PBV	ROA	SIZE
Mean	0.886	0.766	5.452	0.099	28.973
Median	1	0.905	2.18	0.079	28.599
Maximum	1	6.47	57.56	1.099	32.726
Minimum	0	-23.618	-35.18	-0.339	24.604
Std. Dev.	0.233	3.151	11.993	0.185	2.012

Source: Processed data using EViews 2025

The ESG disclosure variable has a mean score of 0.886, with a maximum of 1 and a minimum of 0, indicating that most firms in the sample consistently disclose ESG-related information. This suggests a relatively high level of transparency and commitment to sustainability among the firms

studied. The low standard deviation of 0.233 confirms that ESG disclosure is relatively uniform, with limited variation between companies, reflecting a sector-wide emphasis on reporting standards.

The Debt-to-Equity Ratio (DER) demonstrates a wider spread, with an average value of 0.766, a maximum of 6.470, and a minimum of -23.618. The negative minimum indicates that some firms are experiencing negative equity positions, likely due to accumulated losses or substantial debt burdens. The standard deviation of 3.151 reveals significant differences in leverage structures across companies, illustrating a mix of conservative and highly leveraged financing strategies within the sample.

Price-to-Book Value (PBV) also shows a substantial degree of variability. The mean PBV is 5.452, with a minimum of -35.180 and a maximum of 57.560. This high variation is reflected in a standard deviation of 11.993, indicating that investors place widely different valuations on these companies relative to their book values. The extreme PBV values highlight substantial differences in market perceptions of growth potential, profitability, and financial stability among the firms studied.

In terms of profitability, ROA has an average value of 0.099 (9.9%), with a minimum of -0.339 and a maximum of 1.099. This range suggests that while some firms are exceptionally efficient in generating returns from their assets, others are experiencing losses. The standard deviation of 0.185 indicates moderate variation in profitability, underscoring performance disparities within the sample.

Firm size, represented as the natural logarithm of total assets, has a mean of 28.973, with values ranging from 24.604 to 32.726. The relatively small standard deviation of 2.012 indicates that the firms in the dataset are generally similar in scale, particularly when compared to the variability in leverage and market valuation. Overall, the descriptive statistics suggest that while ESG disclosure levels and firm sizes are relatively consistent, firms exhibit considerable diversity in capital structure, valuation, and profitability—making panel data regression a suitable approach for capturing these variations.

Pooled Least Squares

Table 5. Result of Pooled Least Squares for 14 Non-Cyclical IDX

Variable	Coefficient	Std. Error	T-Statistic	Prob
C	-3.046087	17.04166	-0.178744	0.8587
ESG	5.575421	4.819413	1.156867	0.2516
DER	2.002610	0.372596	5.374752	0.0000
ROA	19.10190	6.507003	2.935591	0.0046
Size	0.004171	0.610360	0.006833	0.9946
R-squared	0.462615	Mean dependent Variable		5.462171
Adjusted R-Squared	0.429545	S.D. dependent variable		11.99362
S.E. of Regression	9.058600	Akaike info criterion		7.314055
Sum squared re sid	5333.786	Schwarz criterion		7.474662
Log likelihood	-250.9919	Hannan-Quin Criter		7.377850
F-statistic	13.98902	Durbin-Watson Stat		0.337333
Prob (F-statistic)	0.000000			

Source: Processed data using EViews, 2025.

The regression results reveal that the model has the R-squared value of 0.4626 which shows that approximately 46.26% of the in firm value can be accounted for by the independent variables: ESG score, DER, ROA, and firm size. The Adjusted R-squared of 0.4295 further reinforces the model's reliability, as it adjusts for the number of predictors while demonstrating a substantial explanatory power.

The F-statistic shows 13.98902, followed by a p-value of 0.000000, confirms that the all-regression The model yields statistically significant results, indicating that the independent variables contribute meaningfully to explaining variations in firm value.

Examining the individual coefficients through the t-test reveals that DER and ROA exert a statistically significant influence on firm value, as evidenced by their p-values of 0.0000 and 0.0046, respectively—both well below the conventional 0.05 threshold. This highlights the importance of a firm’s capital structure and profitability in driving its market valuation. In contrast, the ESG score and firm size variables do not exhibit statistical significance, with p-values of 0.2516 and 0.9946, respectively, suggesting that these factors do not meaningfully impact firm value within the context of this model.

Regarding the direction and magnitude of influence, the DER coefficient stands at 2.002610, implying that a one-unit increase in DER corresponds to a 2.002610 unit increase in firm value, all else being equal. ROA has the largest coefficient, 19.10190, indicating its dominant role among the predictors. Although ESG and SIZE also have positive coefficients, their lack of statistical significance renders their effects inconclusive. The constant term (C), valued at -3.046087, is also statistically insignificant ($p = 0.8587$), suggesting it does not contribute meaningfully to the model's interpretation.

Fixed Effect Model

Table 6. Result of Fixed Effect Model for 14 Non-Cyclical IDX

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-45.50006	81.06583	-0.561273	0.5772
ESG	1.256010	2.466613	0.507015	0.6145
DER	1.266123	0.160538	7.896267	0.0000
ROA	2.833425	3.102040	0.913412	0.3657
SIZE	1.677143	2.820430	0.598460	0.5523

Effects Specification

- Cross-section fixed (dummy variables)
- Period fixed (dummy variables)

R-squared	0.952273	Mean dependent var	5.452171
Adjusted R-squared	0.931393	S.D. dependent var	11.99362
S.E. of regression	3.141483	Akaike info criterion	3.878544
Sum squared resid	473.7800	Schwarz criterion	6.082514
Log likelihood	-166.2491	Hannan-Quinn criterion	5.269242
F-statistic	45.60608	Durbin-Watson stat	1.871657

Source: Processed data using Eviews, 2025

The Fixed Effect Model (FEM) estimation presented above evaluates the influence of ESG performance, capital structure (proxied by DER), profitability (ROA), and firm size (SIZE) on firm value, measured through Price-to-Book Value (PBV), utilizing panel data from non-cyclical firms over the 2020–2024 period. By incorporating both cross-sectional (firm-specific) and temporal (year-specific) fixed effects, the model effectively controls for unobserved heterogeneity that may bias the estimates.

Among the explanatory variables, only the DER demonstrates a statistically proven link to business value. Its coefficient of 1.2661, continued with a p-value of 0.0000, suggests that an increase in leverage has positive and significant associated with a higher PBV—implying that decisions

regarding capital structure serve a pivotal role in increasing firm valuation. Conversely, the variables ESG, ROA, and SIZE exhibit p-values exceeding the conventional 0.05 threshold, indicating that their individual effects on firm value are not statistically substantiated within the model's context.

The model's overall explanatory strength is remarkably high, as evidenced by an R-squared of 0.9523 and an Adjusted R-squared of 0.9314, signifying that more than 93% of the variance in firm value is accounted for by the included predictors and fixed effects. The F-statistic of 45.606, along with the p-value of 0.0000, confirms the joint statistical significance of the model, reinforcing the reliability of the regression results. Additionally, the Durbin-Watson statistic of 1.87 suggests the absence of problematic autocorrelation in the residuals, thereby supporting the model's robustness.

Random Effect Model

Table 7. The outcome of the random effects model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-19.29569	26.94068	-0.716229	0.4764
ESG	-1.469662	1.809066	-0.812145	0.4197
DER	1.389231	1.046266	1.327909	0.1974
ROA	2.772541	3.057519	0.908757	0.3641
SIZE	0.852848	0.933126	0.913969	0.3617
Effect Specification				
			S.D.	RHo
Cross-section random			7.036588	0.8252
Idiosyncratic random			3.238465	0.1748
Weighted Statistics				
R-squared	0.585527	Mean dependent var		1.099138
Adjusted R-squared	0.560021	S.D. dependent var		5.234309
S.E. of regression	3.472410	Sum squared resid		783.7459
F-statistic	22.95634	Durbin-Watson stat		1.218656
Prob(F-statistic)	0.000000			
Weighted Statistics				
R-squared	0.362487	Mean dependent var		5.452171
Sum squared resid	6327.599	Durbin-Watson stat		0.150722

Source: Processed data using Eviews, 2025

The results from the table above is analyzing the impact of ESG, DER, ROA, and firm size on firm value which is PBV using panel data, under the Presumes that the unobserved heterogeneity is randomly distributed and independent of the independent variables. Among the variables, only DER (Debt to Equity Ratio) is found to be a significant predictor, with a coefficient of 1.3892 and a p-value of 0.0000, indicating a strong positive effect on firm value. Meanwhile, ESG, ROA, and SIZE are not statistically significant, as reflected by their high p-values (all above 0.36). The R-squared value of 0.5855, reveals that the model is responsible for about 58.5% of the variation in firm value after considering random effects. Nonetheless, the Durbin-Watson statistics of 1.21 (weighted) and 0.15 (unweighted) point to possible positive autocorrelation in the residuals.

The F-statistic of 22.95643 with a p-value of 0.0000 indicates that the overall model is statistically significant. The rho value of 0.8252 shows that a large portion of the variance is due to differences across entities (cross-sections), supporting the relevance of panel structure. Despite a

simpler assumption compared to FEM, REM may be less appropriate if the unobserved effects are correlated with regressors—this should be confirmed with a Hausman test.

Hausman Test

Table 8. Result Hausman Test of Fixed Model

Test Summary	Chi-Sq Statistic	Chi-Square d.f.	Prob.
Cross-section random	13.730	4	0.0082

Source: Processed data using Eviews, 2025.

The table above shows the Hausman Test and a Chi-Square value of 13.730 with 4 degrees of freedom and a probability value (p-value) of 0.0082, which is below 0.05, suggesting a statistically significant difference between the Fixed Effect and Random Effect estimators, suggesting that the assumption of the Random Effect model is not met because the individual effects have correlation with the independent variables. Therefore, the Fixed Effect Model (FEM) is appropriate to use, as it provides more consistent and unbiased estimators compared to the Random Effect model. Consequently, further analysis and interpretation of the influence of ESG, DER, ROA, and SIZE on PBV should be as indicated by the outcomes of the Fixed Effect Model.

Multicollinearity Test

Table 9. Result Multicollinearity Test

Variable	R ²	VIF	Interpretation
ESG	0.0378	1.039	There is no multicollinearity
DER	0.1848	1.227	There is no multicollinearity
SIZE	0.2517	1.336	There is no multicollinearity
ROA	0.2246	1.289	There is no multicollinearity

Source: Processed data using Eviews, 2025.

The tables above reveal that all variables have VIF values significantly below the standard threshold of 10, suggesting a lack of multicollinearity. Specifically, the ESG variable has an R² of 0.0378 and a VIF of 1.039, while DER has an R² of 0.1848 and a VIF of 1.227. The SIZE variable records an R² of 0.2517 and a VIF of 1.336, and ROA has an R² of 0.2246 with a VIF of 1.289. Since all VIF values are close to 1, this indicates that the regressors do not strongly correlate with each other, allowing the regression coefficients to be interpreted reliably, as multicollinearity is not a concern in this model.

Heteroskedasticity Test

Table 10. Result Heteroskedasticity Test

Test Type	LR Statistic	Degrees of Freedom	Probability (p- value)	Conclusion
Cross-section Heteroskedasticity	245.8166	14	0.0000	There is heteroskedasticity across cross-sections
Period Heteroskedasticity	29.1193	14	0.0101	There is heteroskedasticity across periods

Source: Processed data using Eviews, 2025.

The results showed a Likelihood Ratio value of 245.8166 with a p-value of 0.0000 for the cross-section test, and a Likelihood Ratio value of 29.11933 with a p-value of 0.0101 for the period test. Since both p-values are below 0.05, this indicates the presence of heteroskedasticity across both individuals (cross-sections) and time periods.

Normality Test

Table 11. Normality Test

Statistic	Value
Mean	2.41E-16
Median	0.218420
Maximum	4.841286
Minimum	-4.994997
Std. Dev.	2.593655
Skewness	-0.126930
Kurtosis	2.273070
Jarque-Bera	1.729212
Probability	0.421217

Source: Processed data using Eviews, 2025.

The Jarque-Bera test was used to determine the normality of the residuals, presenting a test statistic value of 1.729 and a probability value of 0.421. From table it shows the p-value exceeds the 0.05 significance level, it can be seen that the residuals are having a normal distribution, satisfying the normality assumption. Furthermore, the skewness of -0.127 and kurtosis of 2.273 support the conclusion that the residuals are approximately normal.

Hypothesis Testing

Table 12. Hypothesis Testing

Variable	COefficient	Std. Error	t-Statistic	Probability (p-value)
C (Intercept)	-5.5538	81.4097	-0.0682	0.9459
ESG	-1.8470	1.8204	-1.0146	0.3150
ROA	1.4732	3.1423	0.4688	0.6412
SIZE	0.3953	2.8191	0.1402	0.8890
DER	1.3626	0.1583	8.6066	0.0000

Source: Processed data using Eviews, 2025.

ESG Score to PBV

The regression results presented in Table 12 show that the ESG score has a negative coefficient of -1.847 with a p-value of 0.315, indicating no statistically significant effect on firm value measured through PBV. This result contradicts Hypothesis H1, which proposed that higher ESG performance would positively influence firm valuation. The outcome suggests that within the Indonesian non-cyclical sector during the period 2020–2024, investors do not appear to reward ESG disclosure in the form of higher firm value.

This finding resonates with other evidence from emerging markets. For instance, found that ESG disclosure had limited valuation relevance in Indonesian companies, highlighting that investors

often prioritize short-term financial indicators over non-financial performance. Similarly, (Prabawati & Rahmawati, 2022) noted a negative ESG–firm value relationship in ASEAN, suggesting that ESG adoption may increase operational costs without being perceived as value-adding by the market. In contrast, (Liu, 2025) observed in Chinese firms that ESG positively influenced valuation when combined with robust corporate governance, implying that institutional context plays a vital role in how investors interpret ESG disclosures.

The divergence between theory and empirical results may be explained through the lens of signaling theory and legitimacy theory. While ESG performance should act as a positive signal of corporate responsibility and long-term resilience, weak enforcement, inconsistent reporting standards, and potential “greenwashing” undermine its credibility in emerging markets. Investors may therefore discount ESG scores as unreliable indicators of future performance. Moreover, legitimacy theory posits that companies may pursue ESG disclosures primarily to satisfy regulatory or reputational pressures, rather than as genuine strategies for value creation. This may explain the negative but insignificant results found in this study.

Internationally, the picture is mixed. Studies in developed markets such as the U.S. and Europe have consistently found positive associations between ESG and firm valuation (Alareeni & Hamdan, 2020). However, emerging markets often report weaker or inconsistent results, largely due to institutional voids, investor skepticism, and lower stakeholder pressure (Wedajo, 2024). The implication is that while ESG could enhance firm value in the long run, particularly as markets mature, its short-term valuation impact in Indonesia remains limited.

Company Size to PBV

Firm size, proxied by the logarithm of total assets, records a coefficient of +0.395 with a p-value of 0.889, indicating no significant influence on PBV. This finding fails to support Hypothesis H2, which predicted that larger firms would command higher valuation due to greater market presence, resource availability, and stability. Instead, the result suggests that scale does not automatically translate into higher investor confidence or market value in the Indonesian non-cyclical sector.

This result is consistent with Anggraeni and Darmayanti (2021) who also found no significant effect of firm size on valuation in Indonesian non-financial sectors. Susanto and Yulianto (2020) similarly concluded that larger firms are not necessarily rewarded with higher PBV, especially if they suffer from bureaucratic inefficiencies or fail to generate proportional returns on assets. In developed markets, however, larger firms often benefit from economies of scale, stronger bargaining power, and easier access to capital, which can positively influence valuation (Alfaro et al., 2017). This suggests that the relevance of size as a value determinant is highly context-dependent.

From a theoretical perspective, signaling theory suggests that larger firms should send positive signals of stability, diversification, and credibility, which ought to reduce perceived risk and enhance valuation. However, in the Indonesian context, the findings suggest that investors may focus more on profitability and capital structure than on scale. Furthermore, larger firms in emerging markets often face higher operational costs, rigid structures, and institutional inefficiencies that may offset the expected advantages of size.

These findings imply that size alone is insufficient to explain variation in firm value without considering qualitative factors such as strategy, market positioning, and corporate governance. For instance, a smaller but more agile and innovative firm may be valued higher than a large firm burdened with inefficiency. This result reinforces the need for firms to complement their scale with effective resource management, innovation, and transparent communication with stakeholders.

Debt Equity Ratio and PBV

The results indicate that DER exerts a positive and statistically significant effect on PBV, with a coefficient of +1.363 and a p-value less than 0.001. This supports Hypothesis H3 and suggests that firms with higher leverage were valued more highly in the Indonesian non-cyclical sector during the observed period. This outcome is somewhat counterintuitive since traditional finance theory predicts that higher leverage should increase financial risk and reduce firm value.

One possible explanation is rooted in the trade-off theory of capital structure, which posits that firms balance the benefits of debt (e.g., tax shields) against the costs (e.g., bankruptcy risk). Within the sample, it is plausible that firms were operating below their optimal leverage threshold, allowing them to reap the benefits of debt financing without incurring excessive risk. Furthermore, investors may interpret higher DER as a signal of aggressive growth strategies and financial discipline, especially in sectors that are considered relatively stable, such as consumer staples and utilities.

International studies support this interpretation. Dsouza (2025) found that capital structure positively influences firm value in several emerging markets, particularly when debt is used strategically to finance expansion. Similarly, Mutumanikam (2024) noted that Indonesian firms in the property sector benefited from higher leverage, as investors viewed debt-financed growth as a positive indicator of future profitability. These findings suggest that, in emerging-market contexts, investors may be more tolerant of leverage, provided that debt is accompanied by credible growth prospects and prudent financial management.

Nevertheless, the positive effect of DER should be interpreted cautiously. Excessive leverage can expose firms to significant financial distress, especially in volatile economic environments. Hence, while leverage appears to enhance valuation in the current sample, it may not be sustainable in the long run unless firms carefully manage their debt levels and ensure consistent profitability.

Return on Asset and PBV

The regression analysis reveals that ROA has a positive and statistically significant effect on PBV, with a coefficient of 2.374 and a p-value below 0.001. This strong significance indicates that firms with higher ROA tend to be valued more highly by the market relative to their book value, supporting Hypothesis H4. A higher ROA reflects a firm's ability to generate income efficiently from its asset base, which signals operational efficiency and financial strength. (Wibowo & Putra, 2020) Investors interpret such profitability as an indicator of sustainable performance, leading to greater confidence in future earnings potential and, consequently, higher firm valuation (A. Wibowo & Putra, 2020; D. A. , Wijaya & Wijaya, 2021; M. Wijaya & Sari, 2021)

These findings align with broader empirical evidence in the literature. For instance, research on manufacturing firms in Indonesia found that ROA significantly and positively influenced PBV, demonstrating that profitability is one of the main drivers of firm value (Susilowati & Turyanto, 2019). Similarly, studies in the banking sector showed that ROA has a positive and significant effect on PBV, even in heavily regulated industries where performance transparency is crucial for investor confidence (Ambarwati & Mustikowati, 2021). Other works also confirm that profitability metrics such as ROA and ROE are central determinants of valuation ratios, underscoring their importance in explaining variations in PBV across firms and industries (Alarussi & Alhaderi, 2018).

However, while the positive effect of ROA on PBV appears robust, several caveats merit attention. The strength of this relationship may vary depending on sectoral characteristics, leverage levels, and firm size, as profitability interacts with other determinants of valuation (Margaretha & Margaretha, 2020). In some industries with high capital intensity, the impact of ROA on PBV may be

weaker or insignificant, suggesting that investors also weigh other indicators of long-term growth and risk management (Sabrin et al., 2016). Moreover, reverse causality may occur—firms with high valuation multiples often enjoy easier access to capital, which may, in turn, enhance profitability. Thus, while ROA is an important determinant of PBV, it should be considered alongside other firm-specific and external factors to capture the full dynamics of firm value.

Conclusion

This paper examines how ESG score, DER, ROA, and business size affect PBV, using panel data from the non-cyclical sector in Indonesia for the years 2020 to 2024. The regression results show that DER has a significant effect on PBV, indicating that capital structure decisions play an important role in determining firm value in this sector. In contrast, ESG score, ROA, and firm size do not show statistically significant effects on PBV. This finding suggests that investors in the Indonesian non-cyclical sector are more sensitive to leverage structure than to sustainability initiatives, profitability, or business scale when valuing firms.

The insignificant effect of ESG score highlights that, despite the global trend of integrating ESG into investment decisions, its role in shaping firm value remains limited in Indonesia. This may reflect a lack of investor awareness, inconsistent ESG disclosure quality, or the tendency of domestic investors to prioritize short-term financial indicators over non-financial performance.

From a methodological perspective, diagnostic testing confirmed that the regression model is free from multicollinearity and normally distributed residuals. However, signs of heteroskedasticity and autocorrelation were detected, which may reduce the efficiency of coefficient estimates. Based on the Hausman test, the Fixed Effect Model (FEM) was selected as the most appropriate estimation technique.

This study is subject to several limitations. First, the analysis only covers a five-year period (2020–2024), which may not fully capture the long-term impact of ESG on firm value. Second, the ESG score used is a composite measure that may not reflect sector-specific materiality factors. Third, the sample is limited to non-cyclical sector firms listed on the IDX, so the findings may not be generalizable to other industries or emerging markets.

Future research can address these limitations by extending the observation period, incorporating materiality-adjusted ESG scores, or applying alternative measures of firm value such as Tobin's Q or market capitalization. Comparative studies between cyclical and non-cyclical industries, as well as cross-country analyses in ASEAN markets, would also provide valuable insights into the varying roles of ESG across different institutional and investor contexts.

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