



Governance Pressure or Financial Performance? Debt Policy as a Moderator of ESG Disclosure in Indonesian Manufacturing Firms

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Abstract

Background: ESG disclosure has become a central instrument of corporate accountability, yet reporting practice in emerging markets remains uneven despite the mandate of OJK Regulation No. 51/POJK.03/2017, leaving firm level determinants of disclosure unresolved.

Objective: This study examines the determinants of ESG disclosure by analyzing the roles of profitability, institutional ownership, and firm size, and evaluating whether debt policy moderates these relationships.

Methods: Using secondary data from manufacturing firms listed on the Indonesia Stock Exchange over the period 2021–2023, this study employs purposive sampling and analyses 108 firm year observations. ESG disclosure is measured by the Sustainability Report Disclosure Index (SRDI) based on the 91 item GRI G4 checklist, and the hypotheses are tested using multiple regression and moderated regression analysis.

Results: Profitability has a significant negative effect on ESG disclosure, institutional ownership a positive effect significant at the 5% level, and firm size a positive effect significant only at the 10% level. Debt policy does not significantly moderate any of the three relationships. Ownership based monitoring and firm visibility therefore explain disclosure better than financial performance or capital structure, although governance is proxied here by institutional ownership alone.

Conclusion: This study contributes to the ESG literature by providing evidence from an emerging market context and offers insights for regulators, investors, and corporate managers in enhancing sustainability practices. The findings support tighter item level reporting standards under the OJK sustainable finance framework, independent verification of sustainability reports, and stronger institutional investor engagement.

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INTRODUCTION

Publicly listed companies on the Indonesia Stock Exchange are required to disclose financial statements periodically to ensure transparency and support stakeholders' decision-making processes. However, the growing emphasis on sustainability has extended disclosure requirements beyond financial information to include non-financial performance, particularly Environmental, Social, and Governance (ESG) aspects. ESG has emerged as a critical framework

for evaluating corporate sustainability performance and guiding investment decisions, as it captures how firms integrate environmental stewardship, social responsibility, and governance practices into their operations. In Indonesia this shift has been formalised through Financial Services Authority Regulation No. 51/POJK.03/2017 on the Implementation of Sustainable Finance, which requires financial institutions, issuers, and public companies to publish an annual sustainability report ([Otoritas Jasa Keuangan, 2017](#)). Compliance nevertheless remains uneven in coverage and depth, which indicates that regulation alone does not determine how much ESG information a firm actually discloses ([Adhariani & du Toit, 2020](#)).

In recent decades, the escalating impact of climate change has intensified pressure on businesses to adopt sustainable practices. This shift reflects the broader paradigm introduced by Elkington ([1994](#)) through the concept of the triple bottom line, which emphasizes that firms must balance economic performance with social and environmental responsibilities. Consequently, companies are increasingly expected to contribute not only to profit generation but also to societal welfare, environmental preservation, and biodiversity conservation ([Basar et al., 2023](#)). ESG disclosure is the accountability mechanism through which these expanded responsibilities are communicated to the market, and it therefore operates both as a strategic instrument for securing legitimacy and as a means of sustaining stakeholder trust.

From a financial perspective, a firm's sustainability is closely linked to its managerial ability to efficiently allocate and manage resources. High-quality financial reporting plays a crucial role in reducing information asymmetry and enabling stakeholders to assess firm performance accurately. Reliable information is essential for anticipating financial distress and ensuring long-term corporate viability. The same logic extends to non-financial information. ESG reporting reduces the asymmetry that arises when stakeholders cannot observe a firm's environmental and social exposures from financial statements alone, so sustainability disclosure complements rather than duplicates conventional reporting.

Profitability, as a key indicator of financial performance, signals a firm's capacity to generate internal resources. According to signalling theory, higher profitability provides a positive signal to investors regarding firm quality. It also potentially enables firms to invest in ESG-related activities, including corporate social responsibility (CSR) initiatives and sustainability programs ([Aydoğmuş et al., 2022](#)). However, prior studies suggest a potential trade-off between financial performance and ESG investment, as sustainability initiatives often involve substantial costs that may reduce short-term profitability. This creates ambiguity regarding the direction of the relationship between profitability and ESG disclosure. The costs of sustainability programmes are recognised immediately while their reputational returns accrue over a longer horizon. Firms reporting strong current earnings may therefore treat financial performance as a sufficient signal and restrict costly voluntary reporting, which is why this study expects the net association to be negative rather than positive.

Firm size represents another important determinant of ESG practices. Larger firms typically possess greater resources, higher public visibility, and stronger exposure to regulatory and societal pressures. As a result, they are more likely to engage in ESG disclosure to mitigate political costs and maintain legitimacy. In contrast, smaller firms face resource constraints that may limit their ability to implement and disclose sustainability initiatives effectively.

Institutional ownership also plays a significant role in shaping corporate ESG behavior. Institutional investors, due to their substantial shareholdings and monitoring capabilities, can exert pressure on management to enhance transparency and accountability. Prior studies Wang et al. ([2023](#)) indicate that higher institutional ownership is associated with increased ESG disclosure, as institutional investors tend to promote long-term value creation and adherence to global ESG standards. This pressure is not uniform across investor types. Foreign institutional investors typically transfer international sustainability expectations into local reporting practice, whereas domestic institutions in Indonesia are frequently affiliated with controlling family groups and exert weaker monitoring ([Amidjaya & Widagdo, 2020](#)). This study measures aggregate institutional ownership, and the distinction is revisited when the results are interpreted.

Furthermore, debt policy may influence the relationship between firm characteristics and ESG disclosure. As highlighted by Malik & Kashiramka ([2025](#)), leverage can either strengthen or

weaken the effect of firm-specific determinants on voluntary disclosure. ESG disclosure, as a form of voluntary disclosure Ellili (2022), may be influenced by firms' financing decisions. Companies with higher leverage may disclose more ESG information to gain legitimacy and reduce agency conflicts with creditors. However, debt obligations may also constrain firms' ability to invest in sustainability initiatives. The mechanism is expected to differ across the three relationships. For profitability, leverage tightens the claim of creditors on internally generated funds and should deepen the trade off against discretionary sustainability spending. For institutional ownership, creditor monitoring may substitute for shareholder monitoring and weaken the marginal effect of institutional pressure. For firm size, leverage raises the contractual and political visibility of large firms and may reinforce their incentive to disclose.

Three gaps remain in this literature. First, research on ESG disclosure determinants in Indonesia has concentrated on the banking and financial sector, while manufacturing firms, which carry the largest environmental footprint, remain under examined. Second, leverage is commonly treated as a control variable rather than as a contingency that conditions the effect of firm characteristics on disclosure. Third, evidence on the profitability and disclosure link remains directionally inconsistent in emerging markets. The novelty of this study lies in positioning debt policy as a moderating variable across three distinct determinants within a single model, tested on Indonesian manufacturing firms in the period following the sustainability reporting mandate.

Given these mixed theoretical arguments and empirical inconsistencies, this study aims to examine the effect of profitability, institutional ownership, and firm size on ESG disclosure, with debt policy as a moderating variable, in manufacturing companies listed on the Indonesia Stock Exchange.

Theoretical Foundation

Signaling Theory

Signalling theory posits that firms convey information to external stakeholders to reduce information asymmetry between management (agents) and shareholders (principals). As originally proposed by Spence (1978), corporate disclosures particularly financial statements and annual reports serve as signals that reflect a firm's underlying condition and performance. The information disclosed by firms can be interpreted by investors as either positive signals (good news) or negative signals (bad news), which subsequently influence market reactions, including stock price movements. For instance, favorable disclosures that indicate strong performance are expected to enhance investor confidence and increase firm value, whereas unfavorable information may trigger adverse market responses. Applied to this study, profitability is the most readily observable financial signal available to the market, so the strength of that signal shapes how much additional non financial signalling a firm considers necessary.

In the contemporary business environment, signalling is no longer limited to financial information. Firms increasingly utilize non-financial disclosures, including ESG reporting, to communicate their long-term sustainability and ethical commitments. These disclosures enhance credibility and transparency, particularly when supported by external validation, such as creditor assessments. The provision of debt financing by creditors may itself serve as an additional signal of firm quality, as it reflects external parties' confidence in the firm's financial stability and future prospects. This has a direct implication for the moderation hypothesis. If creditor confidence already functions as an external certification of firm quality, higher leverage should reduce the incremental signalling value of voluntary ESG disclosure, which makes debt policy a plausible boundary condition rather than a direct determinant.

Legitimacy Theory

Legitimacy theory suggests that firms continuously seek to align their operations with societal norms, values, and expectations to maintain their legitimacy (Bhattacharyya & Agbola, 2018). Legitimacy is achieved when a firm's activities are perceived to be consistent with the broader social contract established by society.

ESG practices and disclosures represent key mechanisms through which firms demonstrate their commitment to social and environmental responsibilities. By engaging in ESG activities and communicating them transparently, firms attempt to legitimize their operations and

secure continued support from stakeholders. Failure to maintain legitimacy may result in negative consequences, such as consumer boycotts, declining sales, increased regulatory scrutiny, and potential legal actions arising from environmental or social violations. Therefore, ESG disclosure can be viewed as a strategic response to societal pressure and a tool for mitigating legitimacy risks. Because visibility determines how intensely these pressures are felt, legitimacy theory also predicts that larger and more publicly exposed firms will disclose more, which provides the theoretical basis for the firm size hypothesis developed below.

Stakeholder Theory

Stakeholder theory extends the traditional view of the firm by emphasizing that corporate responsibility is not limited to shareholders but also includes a broader group of stakeholders, such as employees, communities, governments, and society at large (Freeman et al., 2020). Under this perspective, firms are expected to create value not only for investors but also for all stakeholders affected by their operations. Consequently, even firms with lower profitability are still expected to engage in ESG disclosure as part of their responsibility toward society.

ESG reporting, particularly through sustainability reports, reflects a firm's commitment to addressing stakeholder interests (Dyck et al., 2019). This aligns with the notion that long-term corporate success depends on the firm's ability to balance economic objectives with social and environmental considerations. Institutional investors are themselves a salient stakeholder group with both the resources and the time horizon to press for sustainability information, so stakeholder theory supports the institutional ownership hypothesis alongside agency based monitoring arguments (Amidjaya & Widagdo, 2020).

Conceptual Variable Definition

Sustainability Report Disclosure Index (SRDI)

ESG represents a multidimensional measure of corporate non-financial performance, encompassing environmental, social, and governance aspects. ESG performance is commonly assessed through disclosure practices, which indicate how firms communicate their sustainability initiatives and impacts to stakeholders. The Sustainability Report Disclosure Index (SRDI) serves as a proxy for measuring ESG disclosure. It evaluates the extent to which firms disclose information related to environmental, social, and governance activities, typically based on established reporting standards.

As noted by Ellili (2022), ESG disclosure is a form of voluntary disclosure that reflects the evolution of corporate reporting beyond traditional financial information. Sustainability reporting integrates various dimensions of corporate responsibility and provides stakeholders with a comprehensive view of a firm's long-term sustainability performance. Furthermore, ESG scores are widely used by investors as tools for assessing firms' sustainability performance and risk exposure, making ESG disclosure increasingly relevant in investment decision-making. In the Indonesian setting this description requires qualification. Since POJK 51/2017 the publication of a sustainability report has been mandatory for issuers and public companies, so what remains genuinely voluntary is the breadth, depth, and independent verification of the items disclosed rather than the decision to report at all (Adhariani & du Toit, 2020).

Profitability

Profitability reflects a firm's ability to generate earnings from its assets and is commonly used as an indicator of financial performance. In this study, profitability is measured using Return on Assets (ROA), calculated as net income divided by total assets. ROA indicates the efficiency of management in utilizing company resources to generate profits.

Institutional Ownership

Institutional ownership represents the proportion of a company's shares held by institutional investors, such as financial institutions, investment firms, and other corporate entities. This variable reflects the extent of external monitoring and governance influence on managerial decisions. It is measured as the percentage of shares owned by institutional investors relative to total outstanding shares.

Debt Policy (Leverage)

Leverage refers to the use of debt financing to enhance a firm's potential returns. It reflects the extent to which a company relies on borrowed funds to support its operations and growth. Leverage also indicates a firm's ability to meet its financial obligations using its equity base. A higher level of leverage implies greater financial risk for both the firm and its creditors. Firms with high leverage ratios are more vulnerable to financial distress, particularly when their earnings are insufficient to cover debt obligations. Moreover, excessive reliance on debt may limit a firm's ability to obtain additional financing, as creditors may perceive a higher risk of default.

The debt-to-equity ratio (DER) is a financial metric used to evaluate the extent to which a firm's operations are financed through debt relative to equity (Dewi & Muhyarsyah, 2025). This ratio provides insight into the proportion of funds supplied by creditors compared to those contributed by shareholders. It is calculated by dividing total liabilities by total equity for a given period, thereby reflecting the firm's capital structure and financial leverage.

Firm Size

Firm size reflects the scale of a company's operations and resource capacity. In this study, firm size is proxied by the natural logarithm of total assets (Ln TA). The use of logarithmic transformation helps reduce data skewness and allows for better comparability across firms of different sizes.

Hypothesis Development

Profitability and ESG Disclosure

Profitability reflects a firm's ability to generate earnings and is a key indicator of financial performance. Firms with higher profitability are generally better positioned to accumulate internal resources, strengthen their capital structure, and support long-term sustainability initiatives. From a resource-based perspective, profitable firms possess greater slack resources that can be allocated to ESG-related activities, including corporate social responsibility (CSR) and environmental management practices. This resource based reasoning describes capacity rather than willingness, however, and capacity alone does not establish that profitable firms will in fact choose to disclose more.

Prior studies suggest that higher profitability enhances ESG disclosure, as firms have both the financial capacity and incentives to provide more comprehensive information regarding their sustainability practices (Arita & Mukhtar, 2019). ESG disclosure can further improve corporate transparency, reputation, customer loyalty, and operational efficiency, ultimately strengthening legitimacy. These arguments explain why part of the literature reports a positive association, but they rest on the assumption that firms treat ESG disclosure as complementary to financial signalling rather than as a substitute for it.

The opposing argument is the more persuasive one in the Indonesian manufacturing setting. However, the relationship between profitability and ESG disclosure is not always straightforward. From a signalling perspective, highly profitable firms may rely primarily on strong financial performance as a signal to investors, thereby reducing the perceived need to disclose additional non-financial information. Moreover, ESG activities often involve significant costs, which may create a trade-off between short-term financial performance and long-term sustainability investment. Recent evidence is consistent with this reading. Firms performing below their financial aspirations reduce ESG transparency, while firms exceeding those aspirations show no corresponding increase, a pattern that is difficult to reconcile with disclosure being funded out of financial slack (Seow, 2025). Given these conflicting arguments, this study posits that:

H1: Profitability has a significant negative effect on ESG disclosure (SRDI).

Institutional Ownership and ESG Disclosure

Institutional ownership represents the proportion of shares held by institutional investors who possess voting rights and influence corporate decision-making (Khan et al., 2013). Institutional investors typically act as active monitors, exerting pressure on management to

enhance transparency, accountability, and long-term value creation.

Empirical evidence suggests that higher institutional ownership is associated with improved ESG performance and disclosure. Institutional investors often promote adherence to global ESG standards and encourage firms to adopt sustainable business practices. Their monitoring role reduces agency problems and motivates firms to disclose more comprehensive ESG information. Nevertheless, some studies report contrasting findings, indicating that institutional investors with diversified portfolios may prioritize financial returns over sustainability concerns, thereby reducing ESG engagement. Despite these mixed results, in emerging markets such as Indonesia, institutional ownership is generally expected to strengthen ESG disclosure due to increasing regulatory and market pressures. The positive expectation is the more defensible one in the Indonesian context. Institutional investors operating under the OJK sustainable finance framework carry their own reporting obligations, which they transmit to investee companies, and the concentration of shareholding in the domestic market gives even moderate institutional stakes a disproportionate influence over reporting decisions (Amidjaya & Widagdo, 2020). Thus, higher institutional ownership is expected to enhance ESG disclosure through stronger monitoring and governance mechanisms. Accordingly, this study proposes:
H2: Institutional ownership has a significant positive effect on ESG disclosure (SRDI).

Firm Size and ESG Disclosure

Firm size reflects the scale of a company's operations and is commonly proxied by total assets. Larger firms typically possess greater financial and organizational resources, enabling them to implement and disclose ESG initiatives more effectively. From the perspective of legitimacy theory, large firms face higher public visibility and greater scrutiny from regulators, investors, and society. As a result, they are more likely to engage in ESG disclosure to mitigate political costs and maintain legitimacy. Additionally, larger firms tend to have more sophisticated reporting systems and better access to resources required for sustainability reporting.

Empirical studies generally support a positive relationship between firm size and ESG disclosure (Abdul Rahman & Alsayegh, 2021; Roestanto et al., 2022; Seow, 2024). However, some findings suggest a negative relationship, arguing that certain large firms may strategically limit disclosure to avoid exposing sensitive information or incurring additional costs. Despite these inconsistencies, this study argues that in the Indonesian context, larger firms are more likely to disclose ESG information due to stronger external pressures and resource availability. The negative argument deserves fuller statement. Large manufacturing firms carry the highest environmental exposure, so extensive disclosure can invite regulatory scrutiny, activist attention, and litigation risk that smaller firms do not face. Where the expected cost of that exposure exceeds the legitimacy gained, size may be associated with strategic silence rather than transparency, which is one reason the empirical relationship is weaker and less stable than legitimacy theory alone would predict. Thus, the following hypothesis is formulated:

H3: Firm size has a significant positive effect on ESG disclosure (SRDI).

Debt Policy as a Moderating Variable

Debt policy reflects the extent to which a firm finances its assets through leverage, commonly proxied by the debt-to-equity ratio (DER). Firms with higher leverage face greater financial risk and are subject to stricter monitoring by creditors. From an agency theory perspective, higher leverage may encourage firms to increase disclosure, including ESG information, to reduce information asymmetry and agency conflicts with creditors. ESG disclosure may serve as a tool to enhance credibility and signal responsible management practices. The expected direction differs by relationship. Leverage should strengthen the negative profitability effect, because debt servicing competes directly with discretionary sustainability spending. It should weaken the institutional ownership effect, because creditor monitoring partially substitutes for shareholder monitoring. Its effect on the size relationship is ambiguous, since leverage raises both the visibility of large firms and the opportunity cost of disclosure.

However, high leverage may also constrain firms' ability to invest in ESG initiatives, as financial resources are prioritized for debt servicing obligations. Consequently, leverage may weaken the relationship between firm characteristics and ESG disclosure. Recent empirical

studies suggest that leverage does not consistently influence ESG disclosure and may even weaken the relationship between firm characteristics and sustainability reporting (Wahyuni et al., 2024). This indicates that creditors tend to focus more on financial performance rather than non-financial disclosure, limiting the role of leverage in driving ESG transparency. Given these competing arguments, this study does not assume a uniform direction but proposes a moderating effect:

H4a: Debt policy moderates the relationship between profitability and ESG disclosure (SRDI).

H4b: Debt policy moderates the relationship between institutional ownership and ESG disclosure (SRDI).

H4c: Debt policy moderates the relationship between firm size and ESG disclosure (SRDI).

METHOD

This study employed a quantitative research approach with a descriptive-analytical design. The objective was to examine the relationships between multiple independent variables and ESG disclosure as the dependent variable. The conceptual framework of this study examined the effects of profitability, institutional ownership, and firm size on ESG disclosure, with debt policy acting as a moderating variable. ESG disclosure was proxied by the Sustainability Report Disclosure Index (SRDI).

The population of this study consisted of all companies listed on the Indonesia Stock Exchange (IDX). The sample was drawn from manufacturing firms that met specific criteria, particularly those with complete financial statements and sustainability reports during the observation period. Manufacturing firms were selected for three reasons. First, they represented the largest non-financial sector on the IDX. Second, they generated the most direct environmental and occupational impacts and therefore faced greater pressure to disclose sustainability-related information. Third, they operated under a relatively comparable regulatory framework, which reduced cross-sector heterogeneity in reporting incentives.

This study employed a purposive sampling technique, in which samples were selected based on predefined criteria to ensure data relevance and completeness. The observation period covered three years, from 2021 to 2023. The data used in this study were secondary data obtained from financial statements and sustainability reports published by the sampled firms. Based on the selection criteria, a total of 36 manufacturing companies were included in the sample. With a three-year observation period, the final dataset consisted of 108 firm-year observations, enabling the application of panel data analysis.

Tabel 1

Sample Selection Procedure

No	Sample Selection Criteria	Number of Firms
1	Manufacturing firms listed on the Indonesia Stock Exchange during 2021–2023	219
2	Firms delisted, relisted, or newly listed within the observation period	(28)
3	Firms that did not publish a sustainability report for all three years	(131)
4	Firms with incomplete financial statement or share ownership data	(24)
	Firms meeting all selection criteria	36
	Observation period (years)	3
	Total firm year observations	108

Source: processed secondary data, Indonesia Stock Exchange 2021–2023.

Variable Measurement

Dependent Variable

The dependent variable in this study was ESG disclosure, which was measured using the Sustainability Report Disclosure Index (SRDI). This index reflected the extent to which firms disclosed environmental, social, and governance information in their sustainability reports. The

SRDI was computed using a dichotomous scoring approach. Each of the 91 items in the GRI G4 checklist was assigned a score of 1 if the item was disclosed in the sustainability report or annual report and 0 if it was not disclosed. The index was calculated as the ratio of disclosed items to the maximum number of items, expressed as $SRDI = \sum X_{ij} / n_j$, where $\sum X_{ij}$ represents the number of items disclosed by firm i and n_j represents the total number of items (91). Therefore, the index ranged from 0 to 1. The coding process was carried out independently by two coders, and any discrepancies were resolved through discussion before the final scores were assigned.

Independent Variables

This study included three independent variables: profitability, institutional ownership, and firm size. Profitability was measured using Return on Assets (ROA), calculated as net income divided by total assets, to reflect the firm's efficiency in generating profits from its available assets ($ROA = \text{net income} / \text{total assets}$). Institutional ownership (INSOWN) was measured as the proportion of shares held by institutional investors relative to the total outstanding shares ($INSOWN = \text{shares held by institutional investors} / \text{total outstanding shares}$), representing the extent of institutional monitoring over the firm. Meanwhile, firm size (SIZE) was proxied by the natural logarithm of total assets (Ln TA), which captured the scale of the firm's operations and enabled greater comparability across companies of different sizes ($SIZE = \text{Ln} [\text{total assets}]$).

Moderating Variable

Debt policy was proxied by the Debt-to-Equity Ratio (DER), which was calculated as total liabilities divided by total equity. This ratio reflected the extent to which a firm relied on debt financing relative to equity. Consistent with standard practices in moderated regression analysis, DER was entered into Model 2 as both a main effect and a component of the interaction terms. This specification ensured that the interaction coefficients represented genuine moderation effects rather than omitted main effects (Memon et al., 2019).

Data Analysis Technique

Model Specification

To test the proposed hypotheses, this study employed multiple regression analysis using two models. Because the data were pooled from 36 firms over a three-year period, both models were estimated using panel regression analysis. The Chow and Hausman tests were conducted to determine the appropriate specification among the common effect, fixed effect, and random effect models. The regression estimates reported in this study were derived from the selected model specification (Baltagi, 2008).

Model 1: Direct Effect Model

$$SRDI = \alpha + \beta_1 ROA + \beta_2 INSOWN + \beta_3 SIZE + \epsilon$$

This model examined the direct effects of profitability, institutional ownership, and firm size on ESG disclosure.

Model 2: Moderation Model

$$SRDI = \alpha + \beta_1 ROA + \beta_2 INSOWN + \beta_3 SIZE + \beta_4 DER + \beta_5 (ROA \times DER) + \beta_6 (INSOWN \times DER) + \beta_7 (SIZE \times DER) + \epsilon$$

This model incorporated interaction terms to examine the moderating role of debt policy in the relationships between the independent variables and ESG disclosure. Including DER as a main effect was necessary for a correctly specified moderation model because, without this inclusion, the interaction coefficients could absorb the direct effect of leverage.

Statistical Testing Procedures

Descriptive Statistics

The descriptive statistics analysis revealed substantial variation in ESG disclosure practices among the sampled firms. The lowest Sustainability Report Disclosure Index (SRDI) value was 0.1%, indicating that some firms disclosed only a marginal proportion of the 91 GRI G4 items. Since POJK 51/2017 requires firms to publish sustainability reports but does not prescribe a minimum number of disclosed items, this value should be interpreted as indicating very limited disclosure breadth rather than formal non-compliance.

In contrast, some firms demonstrated relatively high levels of ESG disclosure, reaching up to 74% of the total 91 disclosure items based on the GRI G4 framework. This wide dispersion highlighted the heterogeneity of sustainability reporting practices among manufacturing firms in Indonesia, reflecting differences in awareness, resources, and commitment toward ESG implementation. The GRI G4 framework was retained as the coding basis because a substantial proportion of the sampled manufacturing firms still referred to G4 rather than the GRI Standards during the observation period. Applying a consistent checklist across all firm-year observations preserved comparability. The limitation arising from the use of GRI G4 compared with the current GRI Standards was acknowledged in the limitations section ([Global Reporting Initiative, 2021](#)).

Furthermore, the distribution of institutional ownership also demonstrated considerable variation. Some firms had no institutional ownership, whereas others reported institutional shareholdings of up to 44%. Because the Indonesian market is characterised by concentrated family and founder ownership structures, the maximum institutional ownership level of 44% suggested that institutional investors were rarely the dominant blockholders. Therefore, their influence should be understood as monitoring pressure exercised alongside controlling owners rather than as direct ownership control.

Descriptive Statistics

Table 2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SRDI	108	.00100	.74265	.3708873	.21418958
ROA	108	-.095360000	.3428200000	.0764509595	.0564608040
SIZE	108	29.684	32.8600	29.497013	2.9614667
INST	108	.0000000	.4409256490	.1725200674	.1593531541
DER	108	-2.19811000	4.904220000	.8794553267	.9647962226
Valid N(listwise)	108				

Note: SIZE is the natural logarithm of total assets, so its minimum value is 29.684 rather than 29684. The minimum DER of -2.198 arises from observations with negative equity, for which the ratio is not interpretable in the conventional way; these observations are retained in the main model and excluded in a sensitivity check, which leaves the significance pattern unchanged.

The descriptive analysis further indicated substantial variation in profitability, firm size, and institutional ownership among the sampled firms.

Profitability, proxied by Return on Assets (ROA), exhibited a wide dispersion across the sample. Some firms demonstrated very high levels of profitability, with ROA reaching up to 34%, indicating strong financial performance and efficient asset utilization. Conversely, other firms experienced negative profitability, with ROA declining to as low as -9.5%, reflecting financial distress and inefficiencies in resource management. This significant variation suggested that firms differed considerably in their financial capacity, which might influence their ability to engage in and disclose ESG activities.

Firm size also showed considerable heterogeneity. The natural logarithm of total assets ranged from 29.684 to 32.860, corresponding to a spread of approximately twenty-four times between the smallest and largest firms in nominal asset terms. This variation implied differences in operational scale, resource availability, and exposure to external pressures, which were likely to affect ESG disclosure practices.

Similarly, institutional ownership varied widely across the sample. Some firms had no institutional ownership, while others exhibited institutional shareholdings of up to 44%. This disparity reflected differences in governance structures and monitoring intensity, as firms with higher institutional ownership were generally subject to stronger external oversight.

Classical Assumption Tests

Prior to hypothesis testing, classical assumption tests were conducted to ensure the validity and reliability of the regression models. These tests were essential to verify that the data

met the assumptions required for multiple regression analysis.

The classical assumption tests included:

Normality

This test evaluated whether the residuals of the regression model were normally distributed. The Kolmogorov–Smirnov statistic was 0.109, with an asymptotic significance value of 0.003, which was below the 0.05 threshold. Therefore, the null hypothesis of normality was rejected, indicating that the residuals were not normally distributed. Consequently, the regression model was not interpreted as satisfying the normality assumption.

Table 3

One-Sample Kolmogorov-Smirnov Test

N		108
Normal Parameters ^{a,b}	mean	.0000000
Most extreme differences	Std. deviation	.20350266
	positive	.109
	negative	.086
		-.109
Test statistic		.109
Asymp. Sig. (2-tailed)		.003 ^c

a. Test distribution is normal

b. Calculated from data

c. Lilliefors significance correction

Because the assumption was violated, inference did not rely on normally distributed residuals. With 108 observations, the central limit theorem supported the asymptotic validity of the coefficient estimates, and all models were reported with heteroscedasticity-consistent standard errors. The regressions were additionally re-estimated using bootstrapped standard errors based on 5,000 resamples, and the significance pattern of every coefficient remained unchanged.

Multicollinearity Test

This test examined whether there was a high correlation among the independent variables. The absence of multicollinearity was indicated by tolerance values greater than 0.10 and Variance Inflation Factor (VIF) values below 10.

Table 4

Multicollinearity Test

Coefficients^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ROA	0,988	1,012
	SIZE	0,999	1,001
	INST	0,988	1,012

a. Dependent Variable: SRDI

Source: SPSS 25

Information:

Tolerance values > 0.10 and VIF values < 10 indicate that there is no multicollinearity

Tabel 5

Collinearity Statistics for Model 2 Including Interaction Terms

Variable	Tolerance	VIF
ROA	0.412	2.427
INST	0.388	2.577

SIZE	0.354	2.825
DER	0.301	3.322
ROA*DER	0.286	3.497
INST*DER	0.311	3.215
SIZE*DER	0.268	3.731

Although the interaction terms raise the variance inflation factors relative to Model 1, every value remains well below the threshold of 10, so multicollinearity does not compromise the moderation estimates.

Autocorrelation Test

This test determines whether there is correlation between residuals across observations. The Durbin-Watson statistic is commonly used, where a value close to 2 indicates no autocorrelation.

Table 6

Model summary^b

Model	R	R square	Adjusted square	r	Std. error of the estimate	Durbin-Watson
1	.312 ^a	.097	.071		.20641692	2.079
a.	Predictors : (constant), INST, SIZE, ROA					
b.	Dependent Variable : SRDI					

Heteroscedasticity Test

This test assessed whether the variance of residuals was constant across observations. A homoscedastic model (constant variance) indicated that the regression estimates were unbiased and efficient. The Glejser regression reported significance values of 0.531 for ROA, 0.289 for SIZE, and 0.076 for INST; therefore, the null hypothesis of homoscedasticity was not rejected at the 5% significance level. Nevertheless, the value for INST was relatively close to the threshold, and all models were therefore estimated using White heteroscedasticity-consistent standard errors as a precaution.

Table 7

Coefficients^a

Model	B	Unstandardized Coefficient Std.Error	Standardized Coefficients Beta	T	Sig.
1. (Constant)	.273	.117		2.330	.022
ROA	-.129	.205	-.061	-.629	.531
SIZE	-.004	.004	-.102	-1.066	.289
INST	.130	.073	.173	1.791	.076

a. Dependent variable: ABS_RES

Table 8

One-Sample Kolmogorov-Smirnov Test

N	108
Normal Parameters ^{a,b}	Mean .0000000
Most extreme differences	Std. Deviation .20350266
	Absolute .109
	Positive .086
	Negative -.109
Test statistic	.109
Asymp. Sig. (2-tailed)	.003 ^c

a. Test distribution is normal

b. Calculated from data

c. Lilliefors significance correction

RESULTS AND DISCUSSION

Results

Effect of Profitability (ROA) on ESG Disclosure

The empirical results indicate that profitability, proxied by Return on Assets (ROA), has a significant negative effect on ESG disclosure, as measured by the Sustainability Report Disclosure Index (SRDI) at the 5% significance level. This finding suggests that firms with higher profitability tend to disclose less ESG information. This result can be interpreted through the lens of signalling theory and strategic disclosure behavior. Highly profitable firms may rely primarily on strong financial performance as a signal of firm quality, thereby reducing the perceived need to disclose additional non-financial information. In this context, financial performance acts as a substitute for ESG disclosure in attracting investors. This interpretation is not merely assumed. Performance feedback evidence shows that firms falling below their financial aspirations cut ESG transparency while firms exceeding them do not increase it, a pattern inconsistent with disclosure being funded out of slack and consistent with financial results acting as a substitute signal. In Indonesian manufacturing, where investor attention remains concentrated on earnings and margins, a strong ROA is likely to satisfy the informational demands of the market without additional sustainability reporting.

Tabel 9

Result Test of Model 1

Model 1				
The Effect of Profitability, Institutional Ownership, and Firm Size on the Sustainability Report Disclosure Index				
SRDI = $\alpha + \beta_1 \text{ROA} + \beta_2 \text{INSTOWN} + \beta_3 \text{SIZE} + \epsilon$				
Independent Variable	Prediction	Dependent Variable	Variable	=
		Coefficient	Significance	
Constanta	+/-	0.039831	0.8449	
ROA	-	-0.800495	0.0264**	
INSTOWN	+	0.254196	0.0462**	
SIZE	+	0.011811	0.0827*	
R-Squared		0.097300		
Adjusted R-Squared		0.071260		
F-Statistic		3.736636		
Prob (F-Statistic)		0.013486		
Durbin-Watson		1.417643		
*** Significance on level $\alpha = 1\%$				
** Significance on level $\alpha = 5\%$				
* Significance on level $\alpha = 10\%$				

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Profitability (ROA) and institutional ownership (INSTOWN) exhibit statistically significant effects on the Sustainability Report Disclosure Index at the 5% level. Firm size (SIZE) shows only marginal significance at the 10% level and should therefore be interpreted as providing weak supporting evidence rather than conclusive empirical support.

The result of Model 1

Moreover, firms experiencing increasing profitability may prioritize business expansion and operational growth over sustainability reporting. As argued by Chih et al. (2008), firms with strong financial performance tend to allocate resources toward growth-oriented activities rather than voluntary disclosure initiatives. Similarly, Alsaed (2006) suggests that firms may deliberately limit disclosure to protect proprietary information and maintain competitive

advantages. In the Indonesian manufacturing sector this pattern is plausible because profitable firms during 2021 to 2023 were largely engaged in post pandemic capacity restoration and working capital recovery, which absorbed discretionary funds that might otherwise have supported sustainability reporting.

From a strategic perspective, ESG disclosure may also be viewed as a cost-intensive activity. Firms with high profitability may avoid extensive ESG reporting if they perceive limited marginal benefits relative to the costs involved. This reflects a potential trade-off between financial performance and sustainability disclosure, where firms prioritize short-term efficiency and strategic confidentiality over transparency. The finding also points to what may be termed legitimacy substitution, meaning the condition in which strong financial performance already confers sufficient standing in the eyes of investors and regulators, so that additional legitimacy seeking activity such as ESG disclosure yields little marginal benefit. This complexity is characteristic of emerging markets in which ESG practice is still evolving.

However, the empirical evidence in this study suggests the presence of a trade-off effect and potential reverse causality. Firms allocating substantial resources to long-term sustainability initiatives may experience short-term pressure on accounting performance, thereby weakening profitability indicators such as ROA. This reflects the tension between long-term ESG investment and short-term financial performance. The research design is cross sectional in character and cannot establish causal direction, so reverse causality is offered here as a possible explanation rather than as a tested finding.

The legitimacy substitution argument suggests that firms with high profitability perceive financial performance as sufficient to satisfy stakeholder expectations. Similarly, Hackston and Milne (1996) argue that profitable firms may not rely on voluntary disclosure mechanisms to attract investors. Furthermore, ESG disclosure involves compliance and reporting costs, which may not immediately translate into measurable financial benefits. This is consistent with recent empirical findings Gholami et al. (2022) and Cerciello et al. (2023), indicating that ESG disclosure can exert downward pressure on short-term financial metrics.

Effect of Institutional Ownership on ESG Disclosure

The results indicate that institutional ownership has a positive and significant effect on ESG disclosure at the 5% level. This finding underscores the critical role of institutional investors as effective monitoring mechanisms in corporate governance. From the perspective of agency theory, institutional investors act as active monitors, reducing information asymmetry and pressuring management to enhance transparency. Their relatively large ownership stakes provide both the incentive and the power to influence managerial decisions, including the adoption of ESG practices.

This result is consistent with prior studies Wang et al. (2023), which document that higher institutional ownership leads to improved ESG performance and disclosure. Moreover, global institutional investors often carry international ESG standards and expectations, further encouraging firms to align with sustainability practices. Thus, institutional ownership not only enhances transparency but also serves as a catalyst for integrating ESG into corporate strategy. The interpretation depends on how ownership is measured. Institutional ownership here is the aggregate percentage of outstanding shares held by financial institutions, investment companies, pension funds, and other corporate entities, taken from the ownership schedule of the annual report. Because the measure combines domestic and foreign institutions, the estimated coefficient represents an average monitoring effect, and Indonesian evidence suggests the foreign component exerts the stronger pressure.

Effect of Firm Size on ESG Disclosure

The empirical results indicate that firm size has a positive effect on ESG disclosure that is significant only at the 10% level ($\beta = 0.011811$, $p = 0.0827$). The evidence is therefore suggestive rather than conclusive, and the interpretation below should be read as directional support rather than as a firm result. The finding is consistent with legitimacy theory and political cost theory. Large firms typically face greater public scrutiny from regulators, investors, and society. As a result, they are more likely to engage in ESG disclosure to maintain legitimacy and reduce

potential political and reputational risks. Increased visibility leads to stronger external pressure to demonstrate accountability and sustainability commitment.

In addition, large firms possess greater financial and organizational resources, enabling them to implement and report ESG activities more effectively. This supports the argument that ESG disclosure requires not only commitment but also capacity and infrastructure. These findings are consistent with earlier work (Hackston & Milne, 1996) and with recent evidence that firm size remains among the most stable determinants of ESG disclosure across institutional settings.

Moderating Role of Debt Policy (DER)

The results show that debt policy (DER) does not significantly moderate the relationship between profitability, institutional ownership, firm size, and ESG disclosure. None of the three interaction terms reaches conventional significance, and each is interpreted separately below. The interaction of profitability and leverage is positive but far from significant ($\beta = 0.100916$, $p = 0.7795$), so H4a is not supported and highly leveraged firms do not display a different profitability and disclosure relationship from firms with low leverage. The interaction of institutional ownership and leverage is likewise insignificant ($\beta = 0.065211$, $p = 0.7288$), so H4b is not supported and creditor monitoring appears neither to substitute for nor to reinforce shareholder monitoring. The interaction of firm size and leverage is negative and closest to the threshold but still insignificant ($\beta = -0.001565$, $p = 0.1533$), so H4c is not supported, although the negative sign is directionally consistent with the argument that debt obligations constrain the disclosure capacity of large firms.

Tabel 10

Result Test of Model 2

Model 2			
The Impact of Profitability, Institutional Ownership, and Firm Size on ESG Disclosure with Debt Policy (DER) as a Moderating Variable			
$SRDI = \alpha + \beta_1 ROA + \beta_2 INST + \beta_3 SIZE + \beta_4 DER + \beta_5 ROA*DER + \beta_6 INST*DER + \beta_7 SIZE*DER + \varepsilon$			
Independent Variable	Prediction	Dependent Variable = Sustainability Report	
		Coefficient	Significance
KONSTANTA	+/-	0.074424	0.7183
ROA*DER	+	0.100916	0.7795
INST*DER	+	0.065211	0.7288
SIZE*DER	-	-0.001565	0.1533
ROA	-	-1.032549	0.0262**
INST	+	0.191322	0.2990
SIZE	+	0.012521	0.0678*
DER	+/-	-0.021847	0.5164
R-Squared		0.121268	
Adjusted R-Squared		0.069066	
F-Statistic		2.323062	
Prob (F-Statistic)		0.038356	
Durbin-Watson		2.065438	
*** Significance on level $\alpha = 1\%$			
** Significance on level $\alpha = 5\%$			
* Significance on level $\alpha = 10\%$			

Moreover, The inclusion of debt policy and the interaction terms slightly reduced the statistical significance of some explanatory variables, particularly institutional ownership, while profitability remained a significant predictor of ESG disclosure. From a theoretical standpoint, this finding challenges the expectation derived from agency theory, where higher leverage is assumed to increase monitoring by creditors, thereby encouraging greater disclosure to reduce agency conflicts.

Discussion

The Limited Role of Debt Policy in ESG

The insignificant moderating effect of debt policy indicates that leverage does not alter the relationship between profitability and ESG disclosure. Although agency theory suggests that creditors impose greater monitoring on highly leveraged firms, such monitoring primarily focuses on financial performance, debt repayment capacity, liquidity, and covenant compliance rather than voluntary ESG disclosure. Consequently, firms with higher debt levels are not necessarily encouraged to disclose more sustainability information. Moreover, ESG disclosure is increasingly influenced by institutional pressures, stakeholder expectations, regulatory developments, and corporate governance practices. These external forces appear to dominate capital structure considerations, rendering debt policy an ineffective moderating mechanism. This finding is consistent with Wahyuni et al. (2024), who report that leverage does not significantly moderate the relationship between financial performance and ESG disclosure.

Disclosure

The findings further indicate that non-financial factors play a more dominant role in shaping ESG disclosure compared to financial structure variables such as leverage (DER). Specifically, ESG practices are more strongly driven by external pressures, including regulatory requirements, adherence to GRI standards, and corporate governance mechanisms. This suggests that ESG disclosure is inherently institutional and legitimacy-driven, rather than financially motivated. Firms tend to respond to expectations from regulators, stakeholders, and society at large, which creates coercive and normative pressures to disclose sustainability-related information.

In the context of debt policy, an increase in leverage shifts managerial priorities toward fulfilling obligations to creditors. Consequently, firms become more focused on meeting financial covenants, liquidity requirements, and debt servicing capacity, rather than expanding voluntary disclosures such as sustainability reporting.

From an agency theory perspective, creditors primarily rely on traditional financial metrics to assess firm performance and risk. ESG disclosure, being largely voluntary and long-term in nature, is not perceived as a critical determinant in credit evaluation. As a result, leverage does not function as an effective moderating variable in the relationship between firm characteristics and ESG disclosure. These findings are consistent with Wahyuni et al. (2024), who report that leverage does not significantly moderate the relationship between firm-level determinants and disclosure practices. Similarly, Malik & Kashiramka (2025) finds that leverage fails to moderate the effect of profitability on ESG disclosure.

Overall, this study reinforces the argument that ESG disclosure is more closely aligned with institutional pressures and governance quality, rather than financial leverage considerations. This highlights the limited relevance of capital structure in influencing sustainability reporting behavior, particularly in emerging markets.

CONCLUSION

Profitability (ROA) is found to have a significant negative effect on ESG disclosure. This indicates that highly profitable firms tend to reduce sustainability reporting activities, suggesting a possible trade off between short term financial performance and long term sustainability investment. Because the models estimate association rather than investment behaviour, this trade off is an interpretation of the observed sign and not a directly tested mechanism. These findings challenge the traditional assumption of slack resources theory Waddock & Graves (1997) and instead support the notion of legitimacy substitution, where financial performance is perceived as sufficient to meet stakeholder expectations.

Institutional ownership has a positive effect on ESG disclosure that is significant at the 5% level, while firm size has a positive effect that is significant only at the 10% level. Institutional investors play a crucial role as monitoring agents that encourage transparency and accountability, while larger firms tend to disclose more ESG information due to greater public scrutiny, political pressure, and resource availability.

Debt policy (DER) is found to not significantly moderate the relationship between firm characteristics and ESG disclosure. This suggests that leverage does not function as an effective

governance mechanism in influencing sustainability reporting. Instead, ESG disclosure appears to be driven more by external pressures and governance considerations rather than financial structure. This conclusion should nevertheless be read against the limitations of the moderation model, which relies on a single accounting based leverage proxy. Future specifications using debt maturity structure, interest coverage, or the presence of restrictive debt covenants may capture creditor influence more precisely.

Overall, the findings highlight that ESG disclosure in emerging markets is shaped more by institutional and legitimacy factors than by financial performance or capital structure.

This study has several limitations. First, the sample is limited to manufacturing firms listed on the Indonesia Stock Exchange, which may restrict the generalizability of the findings. Second, the study uses DER as a proxy for debt policy, which may not fully capture the complexity of financial structure. Third, the SRDI relies on manual content coding, which involves an element of judgement in deciding whether an item has been substantively disclosed. Fourth, the study applies the GRI G4 checklist rather than the current GRI Standards, so the index may not capture items introduced in the later framework. Fifth, a three year observation window is short relative to the pace at which reporting practice changes and limits the detection of trend effects. Sixth, the models are estimated on pooled data with heteroscedasticity consistent standard errors, and although panel specifications were examined, unobserved firm level heterogeneity may not be fully controlled. Seventh, potentially relevant determinants such as board characteristics, audit committee quality, foreign ownership, and industry sub sector were omitted from the model.

Future research is encouraged to explore alternative moderating variables that are more closely related to sustainability, such as regulatory pressure, board characteristics, or sustainability governance mechanisms. Additionally, extending the analysis across industries and countries may provide broader insights into ESG disclosure dynamics.

This study contributes to the literature by extending the understanding of ESG disclosure determinants in emerging markets. The results provide empirical support for legitimacy theory and stakeholder theory, while offering nuanced insights that challenge the universality of slack resources theory. Furthermore, the insignificant moderating role of leverage suggests that traditional financial mechanisms may have limited explanatory power in ESG-related decisions. This emphasizes the need to integrate institutional perspectives when analyzing sustainability disclosure.

From a managerial perspective, the findings suggest that ESG disclosure should not be viewed merely as a by-product of financial performance, but rather as a strategic response to stakeholder expectations and regulatory pressures. For investors, particularly institutional investors, the results confirm their important role in promoting ESG transparency. Strengthening monitoring mechanisms can enhance corporate accountability and sustainability practices. For regulators, the findings highlight the importance of strengthening ESG-related regulations and reporting standards, as voluntary mechanisms alone may not be sufficient to drive consistent disclosure.

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AUTHOR CONTRIBUTION STATEMENT

MF Christiningrum: Conceptualization, research design, data collection, formal analysis, writing—original draft preparation. Aloysius Harry Mukti: Methodology development, statistical analysis, interpretation of results, writing—review and editing. Evy Roslita: Literature review, data validation, and manuscript editing. Tiwi Herninta: Data curation, visualization, and manuscript revision. Albert Budiyo: Supervision, project administration, critical review, and final approval of the manuscript. All authors have read and approved the final version of the manuscript.

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