



The Influence of ESG Performance on Cost of Debt: The Moderating Role of Agency Cost

Mohan Maulana Saputra¹, Eka Pria Anas²

¹Master of Management, Faculty of Economics and Business, Universitas Indonesia

²Master of Management, Faculty of Economics and Business, Universitas Indonesia

email: mohan.maulana@ui.ac.id¹,
eka.pria@ui.ac.id, ekapanas@yahoo.com²

Keywords:

ESG (Environmental, Social, dan Governance), Cost of Debt, Agency Cost

ABSTRACT

This study examines the relationship between ESG (Environmental, Social, and Governance) performance and the cost of debt, with agency cost as a moderating variable. Using panel data from companies listed on the Indonesia Stock Exchange (IDX) for the period 2018–2023, this research employs panel regression and interaction analysis. The results show that ESG performance has a positive and significant effect on the cost of debt, indicating that higher ESG scores may be associated with increased costs from the creditors' perspective. Furthermore, agency cost negatively and significantly moderates this relationship, suggesting that when agency costs are high, the positive effect of ESG on the cost of debt is weakened. These findings imply that while ESG initiatives are often perceived as positive signals, their benefits in reducing debt costs may be limited when internal inefficiencies or managerial conflicts exist. The study contributes to the understanding of how internal governance factors interact with sustainability efforts in influencing corporate financing outcomes.

INTRODUCTION

Environmental, Social, and Governance (ESG) has transformed significantly over the past two decades, evolving from a mere component of corporate social responsibility into a strategic indicator that influences companies' risk profiles and financial performance. According to McKinsey's global survey (2022), 83% of executives and investors now acknowledge that ESG creates long-term corporate value, marking a paradigm shift from the traditional view that regarded ESG as purely non-financial. Prominent institutional investors like BlackRock and Vanguard have integrated ESG as an integral component in their investment decision-making processes (BlackRock, 2024; *Vanguard's Approach to Responsible Investment* | Vanguard, 2025), affirming ESG's increasingly important role in assessing investment feasibility.

Awareness of ESG's importance has grown alongside empirical evidence linking ESG performance with financial outcomes. Aydoğmuş et al. (2022) found a positive correlation between effective ESG implementation and increases in company value and profitability. Comprehensive research by Friede Timo; Bassen Alexander (2015), analyzing over 2,000 academic studies since the 1970s, revealed that 90% of studies showed positive or neutral relationships between ESG criteria and corporate financial performance. These findings demonstrate that ESG integration not only supports social and environmental sustainability but also provides investors with a solid foundation for evaluating a company's long-term profit prospects.

An often overlooked dimension of ESG is its ability to mitigate various corporate risks. Research by Li et al. (2022) revealed that companies with superior ESG performance demonstrate better ability to mitigate default risk, with more significant impacts on non-manufacturing companies compared to manufacturing firms. These results strengthen the argument that good ESG practices can provide protection against economic shocks and market uncertainties. Furthermore, research conducted by Feng John W.; Shen Dehua (2022) demonstrated a significant negative relationship between ESG performance and stock price crash risk, indicating that companies with strong ESG implementation exhibit higher resilience against extreme market volatility. During global crises,

such as the COVID-19 pandemic, companies with high ESG scores showed better financial stability, as evidenced by Albuquerque Yrjö; Zhang Chendi (2019), who found that stocks of companies with strong ESG commitments experienced smaller declines during market shocks.

Stakeholder theory offers a conceptual framework that strengthens the relationship between ESG and risk management. Freeman (2010) argued that companies actively managing relationships with all stakeholders—including employees, customers, suppliers, local communities, and the environment—will be more effective in identifying and responding to potential risks. Thus, ESG integration functions not only as a defensive strategy but also as a proactive approach in comprehensive business risk management.

The relationship between ESG performance and corporate cost of debt has become an increasingly intense focus of research in financial literature. In theory, companies with higher ESG scores should enjoy lower debt costs as they are perceived to have better risk profiles by creditors. A recent study by Shi et al. (2024) confirms this premise, showing that companies with strong ESG practices tend to obtain financing at lower costs. Similar findings were revealed by Oikonomou Chris; Pavelin Stephen (2014), who concluded that companies with positive social performance enjoy more competitive interest rates.

Although the majority of studies show a negative relationship between ESG and cost of debt (Agnese & Giacomini, 2023; Apergis et al., 2022), some research shows varied results. Erragragui (2018) and Gigante & Manglaviti (2022) found no significant relationship between these variables. More surprisingly, Magnanelli & Izzo (2017) found that ESG practices can increase debt costs in some cases, possibly due to creditors' perceptions of additional costs for implementing ESG programs. Additionally, Ye & Zhang (2011) showed that ESG's impact on debt costs depends on the level of ESG investment made by companies, implying a non-linear relationship between these variables.

Research by Goss Gordon S. (2011) produced important insights by finding that companies with poor ESG performance pay spreads up to 20 basis points higher for bank loans compared to companies with good ESG performance. However, they also noted that the benefits of good

ESG practices tend to vary based on company characteristics and industry. These results indicate that the relationship between ESG and cost of debt is not entirely homogeneous and can be influenced by various contextual factors.

An interesting phenomenon emerges when analyzing data from Indonesia. As shown in Figure 1.1, the average ESG score of companies in Indonesia has exhibited an upward trend from

2015 to 2022. However, contrary to theoretical expectations, the cost of debt has also tended to increase, particularly after 2021. This result raises questions about the effectiveness of ESG practices within the Indonesian capital market context and suggests the possible presence of moderating factors that have not been thoroughly explored in the local setting.

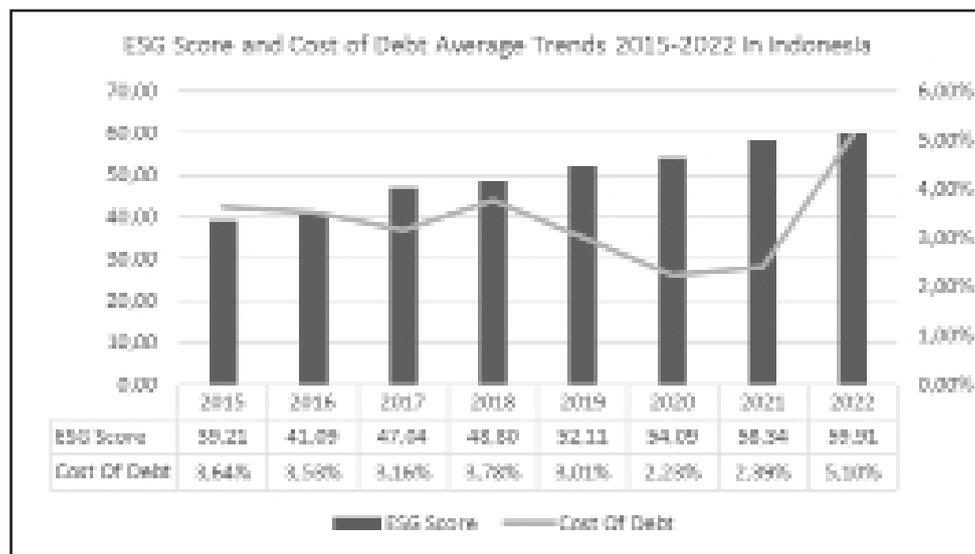


Figure 1. Trends in Average ESG Scores and Corporate Cost of Debt in Indonesia, 2015–2022.

Several possible explanations may account for this paradox. First, the Indonesian financial market may not have fully integrated ESG information into credit risk assessment processes, potentially due to the lack of standardization in ESG reporting or relatively low awareness among domestic creditors. Second, Indonesia's institutional context—characterized by high levels of information asymmetry and weak investor protection—may limit the positive effects of ESG practices (Claessens & Yurtoglu, 2013). Third, there may be other moderating variables that have not been fully identified, such as ownership structure or specific corporate governance characteristics, which could influence the relationship between ESG performance and the cost of debt.

Agency cost emerges as a critical factor that can moderate the relationship between ESG and cost of debt. Agency cost arises due to conflicts of interest between principals (shareholders) and agents (managers), which can lead to suboptimal decision-making and increase risk for creditors (Jensen & Meckling, 1976). Chui et al. (2016) confirmed

that high agency costs correlate with increased debt costs, as a response to greater uncertainty related to managerial behavior. ESG can function as a mechanism that mitigates agency cost through increased transparency and accountability. Hill & Jones (1992) argued that strong ESG practices can reduce moral hazard risk and increase creditor confidence.

Significant findings regarding agency cost's moderating role in the relationship between ESG and cost of debt were demonstrated by recent research from Alves & Meneses (2024) in their article "ESG scores and debt costs: Exploring indebtedness, agency costs, and financial system impact." This study specifically explored how agency cost moderates the relationship between ESG scores and cost of debt, finding significant empirical evidence that agency cost indeed has a negative moderating effect in this relationship. The research results show that the positive effect of ESG implementation on reducing debt costs tends to weaken in companies with higher agency costs. In other words, although ESG generally helps reduce

debt costs, these benefits become less significant when agency costs are high, indicating that large agency conflicts can reduce the credibility of ESG signals in creditors' eyes.

Unlike Alves and Meneses's findings (2024), some previous research such as Erragragui (2018) shows varied results regarding the interaction between agency cost and ESG in influencing cost of debt. While Alves and Meneses found a negative moderating effect, different contexts and sample characteristics can produce different relationship patterns. These differing findings emphasize the importance of understanding how agency cost moderation dynamics can vary based on specific institutional contexts and market characteristics. A study by Cheng et al. (2014) showed that companies with better ESG performance have easier access to financing due to reduced information asymmetry and agency costs. They found that companies with high ESG scores have better transparency levels, which reduces uncertainty and risk for creditors.

While existing literature provides valuable insights about the relationship between ESG and cost of debt, as well as agency cost's moderating role, several significant gaps remain that need further examination. First, most research, including Alves and Meneses's study (2024), focuses on advanced capital markets, with limited attention to developing countries like Indonesia that have different institutional characteristics and financial markets. Second, Alves and Meneses's research (2024) used orthogonalized ESG variables in their analysis, whereas this research will use combined ESG variables that comprehensively incorporate environmental, social, and governance components. Using combined ESG provides a more holistic approach in assessing corporate sustainability practices and allows observation of the aggregate effects of these three ESG dimensions, different from the orthogonalization approach that separates ESG components.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Environmental, Social, and Governance (ESG) has emerged as a critical factor in evaluating corporate performance from a sustainability perspective. According to stakeholder theory developed by Freeman (2010), companies need

to consider the interests of various stakeholders, including creditors, in making strategic decisions. This theory provides a conceptual foundation for understanding how ESG practices can influence creditors' perception of corporate risk and, consequently, the cost of debt imposed.

Empirical studies provide substantial evidence that strong ESG performance correlates with lower debt costs. In comprehensive research using a global sample of 6,018 companies during the 2010-2022 period, Shi et al. (2024) found that companies with higher ESG scores consistently secured loans with lower interest rates, with an average decrease of 18 basis points for each standard deviation increase in ESG scores.

Evidence from international debt markets also supports this relationship. Analyzing data from 28 countries, Stellner Christian; Zwergel Bernhard (2015) found that strong ESG performance reduces credit spreads, particularly in countries with supportive institutional environments. Related to this, Eliwa et al. (2021) studied European companies and identified a significant relationship between high-quality ESG disclosure and lower debt costs, with an average reduction of 25 basis points for companies with ESG disclosures in the top quartile.

Although the majority of empirical evidence points to a negative relationship between ESG performance and debt costs, some studies reveal different or more nuanced results. Magnanelli & Izzo (2017) analyzed 332 multinational companies and found that, in some contexts, higher ESG scores were associated with higher debt costs. They posited that creditors might view ESG investments as an additional burden that reduces financial resources available to fulfill debt obligations.

Agency costs arise from conflicts of interest between principals (shareholders) and agents (management) and are a key concept in understanding corporate governance dynamics. According to the fundamental agency theory developed by Jensen & Meckling (1976), managers as agents do not always act in the best interests of shareholders as principals, giving rise to monitoring and bonding costs. ESG plays an important role in these agency dynamics, as it serves as a mechanism to align the interests of management with shareholders and other stakeholders.

The interaction between agency cost, ESG, and cost of debt can be understood through several

theoretical perspectives. According to agency theory, conflicts of interest between shareholders and creditors can lead to excessive risk-taking and underinvestment, both of which increase default risk and ultimately raise the cost of debt (Jensen & Meckling, 1976). ESG, as a governance mechanism, can reduce the likelihood of such opportunistic behavior and thus moderate the relationship between agency cost and cost of debt.

Legitimacy theory also provides insights, suggesting that companies seek to legitimize their operations through compliance with social norms and expectations (Suchman, 1995). In this context, strong ESG practices can enhance a company's legitimacy and reduce perceived risk, which can positively influence lending decisions from creditors, even in the presence of high agency costs.

Alves & Meneses (2024) analyzed a sample of global companies and found that agency costs can strengthen or weaken the impact of ESG on debt costs, depending on the effectiveness of corporate governance. When strong governance supports ESG, the effect on debt costs becomes increasingly significant. Conversely, if agency costs are high and poorly controlled, ESG may not be sufficient to reduce debt costs.

Substantial theoretical and empirical evidence indicates a relationship between ESG performance and cost of debt. Stakeholder theory (Freeman, 1984) provide conceptual frameworks for understanding how strong ESG practices can reduce the risk perceived by creditors. Empirical studies by Shi et al. (2024), Oikonomou Chris; Pavelin Stephen (2014), and others consistently show that companies with higher ESG scores tend to obtain financing at lower interest rates.

Although some studies such as Magnanelli & Izzo (2017) and Gigante & Manglaviti (2022) show different results, the majority of evidence indicates that ESG has a significant influence on debt costs.

Therefore, the first hypothesis is formulated as follows:

H1: A company's ESG score significantly influences the cost of debt it incurs.

The literature indicates that agency costs can affect the effectiveness of ESG in reducing debt costs. Agency theory (Jensen & Meckling, 1976) and legitimacy theory (Suchman, 1995) provide frameworks for understanding how ESG can

function as a mechanism to reduce agency conflicts and enhance corporate legitimacy, which in turn can influence creditor perceptions.

Empirical studies by Erragragui (2018) and Apergis et al. (2022) document the moderating role of agency costs, indicating that the impact of ESG on debt costs can be strengthened or weakened depending on the level of agency costs within the company. Alves & Meneses (2024) further show that the effectiveness of corporate governance in controlling agency costs can influence the ESG-debt cost relationship.

Based on this evidence, the second hypothesis is formulated as follows:

H2: Agency cost moderates the relationship between ESG score and the cost of debt incurred by a company.

RESEARCH METHODS

This study applies a quantitative descriptive approach, utilizing secondary data from publicly listed companies on the Indonesia Stock Exchange (IDX) for the 2018–2023 period, sourced from Refinitiv. The research process consists of three primary stages, namely data collection procedures, data processing procedures, and hypothesis testing procedures. In the data collection stage, a purposive sampling technique is employed, whereby samples are selected based on specific criteria aligned with the research objectives. The sample comprises public companies listed on the IDX from 2018 to 2023.

A purposive sampling technique is employed, wherein the sample selection is based on predetermined criteria rather than random selection to ensure the relevance and completeness of the data. The companies included in the sample must fulfill the following requirements: (1) being consistently listed on the IDX throughout the observation periods; (2) having publicly available annual reports for each year within the specified period; (3) possessing ESG performance data for observation periods; (4) providing cost of debt data for observation periods; (5) reporting Total Assets and Sales data for observation periods; and (6) presenting complete and consistent data necessary for the analysis. These criteria are established to enhance the validity and reliability of the findings generated in this study. As a result, the study yields

a balanced panel comprising up to 252 firm-year observations.

This study aims to examine the relationship between ESG performance and agency cost on the cost of debt in Indonesia. In previous studies, panel data regression was used as the analytical method. This research implements lagged variables to reduce the risk of endogeneity in the variable testing.

In the first model, the ESG Combined Score is used as the main independent variable representing environmental, social, and corporate governance performance. The dependent variable is the Cost of

Debt (COD), measured using data from Refinitiv. To control for the potential influence of other firm characteristics, several control variables are included, namely firm size (Size), profitability (ROA), leverage (Lev), and interest coverage ratio (ICR). This model refers to the approach used by Alves & Meneses (2024), Shi et al. (2024), and Apergis et al. (2022), who examined the relationship between ESG performance and the cost of debt.

$$COD_{i,t} = \alpha + \beta_1 ESG_{i,t-1} + \beta_2 SZ_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 LEV_{i,t-1} + \beta_5 ICR_{i,t-1} + \epsilon_{i,t-1}$$

Table 1. Operational Variables.

Variable	Type of Variable	Symbol of Variable	Measurement	Reference
Cost of Debt	Dependent Variable	COD	Cost of Debt from Refinitiv	Alves & Meneses (2024)
ESG Score	Independent Variable	ESG	ESG Combined Score from Refinitiv	Alves & Meneses (2024)
Agency Cost	Moderating Variable	AC	Total Assets / Sales	Alves & Meneses (2024)
Firm Size	Control Variable	Size	Log(Total Assets)	Shi et al. (2024)
Return on Asset	Control Variable	ROA	Net Income / Total Assets	Alves & Meneses (2024)
Leverage	Control Variable	Lev	Total Assets / Total Equity	Shi et al. (2024)
Interest Coverage Ratio (ICR)	Control Variable	ICR	Earnings Before Interest and Tax / Interest Expenses	Apergis et al. (2022)

The next model incorporates the interaction between the ESG Score and agency cost as a moderating variable to examine whether the effect of ESG on the cost of debt varies with the firm's level of agency cost. Agency cost is measured using the ratio of total assets to revenue, as applied in the study by Alves & Meneses (2024). In addition, this model also includes the same control variables as in model 3.4.1—namely Size, ROA, Lev, and ICR—to ensure that the results are not biased by other factors influencing the cost of debt.

$$COD_{i,t} = \alpha + \beta_1 ESG_{i,t-1} + \beta_2 AC_{i,t-1} + \beta_3 (ESG_{i,t-1} \times AC_{i,t-1}) + \beta_4 SZ_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_5 LEV_{i,t-1} + \beta_6 ICR_{i,t-1} + \epsilon_{i,t-1}$$

Where:

COD: a dependent variable of cost of debt.

ESG: an independent variable of ESG combined score.

AC: an moderating variable of agency cost.

SZ: a control variable of firm size.

ROA: a control variable of return on asset.

LEV: a control variable of leverage.

ICR: a control variable of interest coverage ratio.

OPERATIONAL VARIABLES

The empirical model above is analyzed using balanced panel data regression with the HAC (Heteroskedasticity and Autocorrelation Consistent) method to address issues of heteroskedasticity and autocorrelation in the classical assumptions.

RESULTS AND DISCUSSION

The regression results presented in Table 4.5 summarize the findings from two models used to test the hypothesis regarding the effect of ESG performance on agency cost. Model 1 includes ESG performance and firm-level control variables, while Model 2 adds agency cost as an additional independent variable and introduces an interaction term between ESG performance and agency cost to test the moderation effect.

In Model 1, the coefficient for the ESG variable is positive at 0.0005 and statistically significant at the 1% level. This indicates a consistent relationship between higher ESG scores and an increase in the cost of debt, although this model does not yet account for agency costs. The coefficient suggests that a one-point increase in the ESG score is associated with a slight rise in a firm's cost of debt. The control variable Return on Assets (ROA) shows a positive effect of 0.0485 and is also significant at the 1% level. Meanwhile, other control variables such as firm size (SZ), Interest Coverage Ratio (ICR), and leverage (LEV) do not exhibit statistical significance in this model.

Table 2. Regression Result.

Variables	Model 1	Model 2
ESG	0.0005*** (0.0010)	0.0007*** (0.0020)
AC	-	0.00207 (0.2610)
ESC*AC	-	-0.0001* (0.0980)
ROA	0.0485*** (0.0040)	-0.0547*** (0.0020)
SZ	0.0068 (0.2670)	0.0078 (0.1940)
ICR	-0.00001 (0.2040)	-0.0001 (0.2610)
LEV	0.0011 (0.4980)	0.0015 (0.4150)
Observations	252	252

Notes:

EsgScore= ESG Performance; AgencyCost= Agency Cost; ROA= Return on Assets; Size= Firm Size; ICR= Interest Coverage Ratio; Leverage= Firm Leverage
 *** significant at 1%; ** significant at 5%; * significant at 10%

In Model 2, the ESG variable remains positively associated with the cost of debt, with a coefficient of 0.0007, which is still significant at the 1% level. This suggests that the positive relationship between ESG and cost of debt persists even after accounting for agency costs. Additionally, the interaction term between ESG and agency cost (ESG*AC) yields a negative coefficient of -0.0001, which is statistically significant at the 10% level.

The control variable ROA continues to have a positive and significant effect (0.0547 at the 1% level), while firm size, ICR, and leverage remain statistically insignificant in Model 2, as in Model 1. This implies that these variables do not provide a sufficiently strong contribution in explaining variations in the cost of debt within the analyzed sample. The findings of this study carry significant implications, as they contribute to the limited body of literature on ESG and corporate finance in emerging markets. While most prior research has focused on developed economies with mature ESG ecosystems (Alves & Meneses, 2024), this study enriches the discourse by providing empirical evidence from Indonesia—an emerging market characterized by evolving ESG disclosure practices and uneven institutional enforcement. Accordingly, the study advances theoretical understanding by integrating stakeholder theory and agency theory into the ESG literature and empirically testing the interaction mechanism between ESG and agency cost in influencing corporate financing outcomes.

Empirically, the research findings support the first hypothesis (H1), namely the existence of a positive and statistically significant relationship between ESG performance and cost of debt. Contrary to the dominant view in the literature, this result indicates that higher ESG performance does not necessarily lead to lower financing costs in the Indonesian context. The second hypothesis (H2) is also supported by the finding that the interaction between ESG and agency cost is statistically significant, indicating that ESG moderates the relationship between agency cost and cost of debt in this study sample.

These findings are in line with several recent studies from other developing countries. In contrast to studies in developed markets—which generally conclude that ESG performance reduces the cost of capital (Ge Mingzhi, 2015; Ghouli Omrane; Kwok Chuck C.Y.; Mishra Dev R., 2011)—several studies from China and other emerging economies have reported a weak or even positive relationship between ESG and cost of debt (Lian Tao; Zhang Yiyang; Zhang Lin, 2023). These divergent findings highlight the importance of institutional context. In Indonesia, the relatively weak ESG regulatory framework, the absence of standardized disclosure requirements, and low investor awareness may lead ESG initiatives to be perceived not as value-

enhancing activities but rather as inefficient additional costs.

The positive relationship between ESG and cost of debt may stem from several factors. One explanation is that ESG initiatives in Indonesia are still at an early stage and lack credibility in the eyes of lenders. Without standardized and verifiable ESG metrics, lenders may perceive ESG investments as discretionary expenditures that divert resources from core business activities. Consequently, lenders may view such efforts as increasing risk (even if they are well-intentioned in the long term), due to the potential for elevated short-term expenditures. Furthermore, ESG practices may not yet be fully integrated into corporate strategies, fostering skepticism among lenders regarding the long-term value of such initiatives.

The next and most complex finding is the significant negative interaction effect between ESG performance and agency cost, suggesting that agency cost moderates the relationship between ESG and cost of debt. Specifically, for firms with higher agency costs, the positive influence of ESG on cost of debt becomes weaker. This implies that although ESG is generally positively correlated with cost of debt, its adverse impact is mitigated when creditors observe ESG practices in firms with poor corporate governance.

This result aligns with the findings of Alves & Meneses (2024), which indicate that the impact of ESG on financing costs is highly influenced by the quality of corporate governance. In other words, the effect of ESG on increasing cost of debt is less pronounced in firms with high agency costs. ESG becomes a less meaningful signal in the eyes of creditors when agency conflicts are severe.

This pattern supports the view that ESG signals are interpreted in conjunction with the quality of internal governance. When agency costs are low (e.g., in firms with strong governance), ESG performance may be viewed as a discretionary strategic choice—which could actually raise the cost of debt due to implementation costs. Conversely, when agency costs are high, the positive impact of ESG on cost of debt becomes less significant. This can be interpreted as ESG serving as a mechanism to reduce perceived risk in firms with weak governance.

However, it is important to note that Alves & Meneses employed an orthogonalized ESG approach that separates ESG from risk measures, whereas the present study uses aggregate ESG scores. Such aggregate scores reflect the overall perception of a company's ESG performance but may obscure the distinct effects of environmental, social, and governance dimensions. This difference in measurement approach may help explain why aggregate ESG scores in the Indonesian context are found to be positively associated with cost of debt.

Another key finding is that agency cost does not have a statistically significant direct effect on the cost of debt. Based on the study by Qian & Strahan (2007), creditors in emerging markets tend to rely more on strict covenants and asset collateral as control mechanisms rather than agency cost assessments. Such practices likely diminish the relevance of agency cost in determining debt pricing.

Furthermore, the findings show that profitability (ROA) has a positive and significant influence on cost of debt. This is a notable result, as higher profitability would conventionally be expected to reduce financing costs, but in this case, it increases them. Boubakri & Ghouma (2010) found that in emerging markets, profitable firms often use earnings to support aggressive expansion or unrelated diversification, increasing overall business risk. Creditors may charge higher risk premiums to compensate for such risk-taking behavior.

Subsequent findings show that Interest Coverage Ratio (ICR), leverage, and firm size do not exhibit statistically significant effects on cost of debt in either of the tested models. While this may seem counterintuitive, several prior studies support these results. For instance, Erragragui (2018) and Magnanelli & Izzo (2017) suggest that in environments where non-financial factors (e.g., ESG or agency cost) play a more dominant role, traditional financial ratios may lose explanatory power. In emerging markets characterized by weak disclosure standards and regulatory enforcement, creditors may pay greater attention to governance signals than to indicators of profitability or capital structure.

Similarly, studies by Menz (2010) and Hoepner Ioannis; Scholtens Bert; Schröder Michael (2016) find that leverage is not always a strong predictor of cost

of debt in bond markets or underdeveloped financial systems. As also noted by Shi et al. (2024), ESG metrics can absorb much of the explanatory power that was traditionally attributed to conventional financial indicators.

CONCLUSION

This study examines the influence of Environmental, Social, and Governance (ESG) performance and agency cost on the cost of debt among publicly listed companies in Indonesia. The findings reveal that both ESG performance and agency cost exhibit a positive and statistically significant relationship with the cost of debt. These results contradict the prevailing expectation that ESG initiatives reduce financing costs by mitigating firm risk. Instead, the evidence suggests that in the context of Indonesia as a developing country, corporate engagement in ESG is still perceived by creditors as an additional cost burden or as initiatives

that have yet to demonstrate measurable financial benefits, particularly in reducing credit risk.

Furthermore, the interaction between ESG performance and agency cost shows a statistically significant effect, indicating that agency cost serves as an effective moderating mechanism that weakens the impact of ESG performance on the cost of debt. This implies that the positive effect of ESG on debt cost becomes weaker in firms with high agency costs. ESG signals are perceived as less meaningful by creditors when agency problems are substantial.

This study also acknowledges certain limitations. Agency cost in this research is measured using financial proxies, which may not fully capture all aspects of agency problems. Future studies may examine agency cost as a moderating variable using alternative proxies such as governance quality, transparency regulations, managerial entrenchment, or shareholder activism to deepen the understanding of the financial implications of ESG

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