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Does Environmental, Social, and Governance (ESG) Disclosure Matter for Creditor? Empirical Evidence from Indonesia

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ABSTRACT

This research aims to examine the impact of environmental, social, and governance (ESG) disclosure on cost of debt in non-financial companies listed on the Indonesia Stock Exchange across ten different industries. This study utilizes a sample comprising 288 non-financial companies from ten different industries listed on the Indonesia Stock Exchange for the period from 2017 to 2022, all of which have published sustainability reports (SR), resulting in 742 observations. Regression analysis using Ordinary Least Squares (OLS) is employed to examine the impact of companies' ESG disclosures on costs of debt. The robustness of these findings is assessed and confirmed through four distinct analytical models, namely OLS Standard Error, SSC Model, Fixed Effect Model, and Random Effect Model. The research outcomes indicate that increased environmental, social, and governance (ESG) disclosure is associated with a reduction in the cost of debt. These findings exhibit robustness across diverse industries and remain consistent when employing various statistical methodologies.

1. INTRODUCTION

In the global pursuit of development, world leaders formally adopted the Sustainable Development Goals (SDGs) agenda on September 25, 2015. The SDGs constitute a comprehensive agenda designed to perpetuate ongoing enhancements in the economic well-being of communities, sustain the social fabric of societies, safeguard the environment, foster inclusive development, and institute governance mechanisms capable of preserving improvements in the quality of life from one generation to the next. The implementation of the SDGs involves the active participation of all economic actors, encompassing both governmental entities and organizations/companies [1-4].

The heightened awareness of corporate social responsibility has garnered significant attention, as evidenced by rapid growth in scholarly research [5-8]. Consequently, companies are increasingly adopting business practices that extend beyond mere profit maximization, incorporating ethical considerations and sustainability issues into their operations [9]. In this evolving landscape, there is a reassessment of traditional business models [10], with a growing emphasis on approaches that actively contribute to the preservation of the Earth's ecosystem and its natural equilibrium [11].

ESG represents an extension and enhancement of the concepts underlying the green economy, corporate social responsibility, and responsible investment. According to Eccles [12], ESG disclosure is often viewed by many investors and creditors as a proxy for evaluating the quality of a company's management [13, 14]. This disclosure serves as a form of corporate transparency, holding the potential to mitigate information asymmetry [15, 16] between the company and its stakeholders, particularly investors and creditors from lending institutions [4, 17].

The integration of all ESG dimensions plays a crucial role in facilitating a lending institution's evaluation of opportunities, risks, transparency, and the future performance of the respective company [18]. As a result, lending institutions heavily rely on ESG reports and metrics to assess and quantify company performance indicators [19]. Enhanced information transparency not only aids in diminishing information asymmetry but also contributes to companies maintaining a positive image in the eyes of stakeholders. Companies are perceived as having long-term goals and adhering to regulations, and this adherence to ESG disclosure is associated with a potential reduction in the cost of debt [20-23].

R.Q: *Does ESG disclosure have a negative effect on the cost of debt?*

The research question was addressed using data from non-financial companies listed on the Indonesia Stock Exchange during the period from 2017 to 2022. The findings of the study offer robust evidence, indicating that companies with higher levels of ESG disclosure experience a lower cost of debt. These results suggest that ESG practices play a significant role in influencing the creditworthiness of a company as perceived by lending institutions. The argument posited is that lending institutions incorporate corporate ESG information into their

lending decisions to assess two critical types of risks associated with these companies: default risk and reputation risk [5, 24, 25].

This research makes a significant contribution to the literature on environmental, social, and governance (ESG) by presenting empirical findings on the impact of ESG on the cost of debt, specifically within the context of developing countries, with a particular focus on Indonesia. Notably, existing research that explores the influence of ESG on the cost of debt has predominantly been conducted in the contexts of developed countries, such as America and Europe [4, 5, 22, 26, 27]. This research thus fills a crucial gap by shedding light on how ESG considerations affect the cost of debt in the unique setting of a developing country like Indonesia.

This research also holds significance as the pioneering study to furnish empirical evidence across ten non-financial industries. These industries encompass Energy, Basic Materials, Consumer Cyclicals, Consumer Non-Cyclicals, Healthcare, Industrials, Infrastructures, Property and Real Estate, Technology, and Transportation and Logistics. The findings reveal that, with the exception of the Technology industry, all other industries demonstrate evidence supporting the idea that ESG disclosure can lead to a reduction in the cost of debt. The scarcity of technology companies in Indonesia is proposed as a potential explanation for the absence of conclusive results in this particular industry. It is acknowledged that a limited sample size can introduce challenges in testing, preventing the findings from providing specific insights for the Technology industry due to its relatively small representation.

2. LITERATURE REVIEW

2.1 Stakeholder theory

Stakeholder theory fundamentally posits that a company is not solely driven by its self-interests; rather, it is obligated to deliver benefits to its stakeholders. The term 'stakeholder' is expansive in its scope, as highlighted by Harmoni [28]. Bowmann-Larsen and Wiggen [29] offer a definition of stakeholders as all individuals and groups with a 'critical eye' on company actors. Stakeholders, according to Freeman and McVea [30], are groups or individuals who possess the capacity to influence or be influenced by the processes involved in achieving an organization's goals.

Stakeholder theory asserts that companies bear a responsibility beyond solely maximizing profits for shareholders; they are also accountable for delivering benefits to society, the social environment, and the government—collectively referred to as stakeholders. Companies are tasked with cultivating positive relationships with stakeholders by addressing their desires and needs [31], particularly those stakeholders wielding influence over crucial resources essential for the company's operational activities, such as labor, suppliers, and the government [32]. One approach to maintaining these relationships and safeguarding the interests of all parties involved is through the practice of ESG disclosures [33].

ESG disclosure serves as a mechanism for transparently conveying information about a company's stance and actions concerning economic, environmental, and social aspects. Through the practice of ESG disclosures, stakeholders can directly assess the company's performance, influencing their decisions and contributions to the company. This influence extends to various aspects, including stakeholder decisions related to supporting the company and providing access to funding [34-36].

2.2 Legitimacy theory

Legitimacy theory, developed by Guthrie and Parker [37] in 1989, posits the existence of a social contract that explains the relationship between society and companies. According to Suchman [38], legitimacy is the general perception or assumption that the actions of an entity are desirable, appropriate, or fitting within some socially constructed system of norms, values, beliefs, and definitions. Legitimacy theory asserts that organizations are continually striving to ensure that their activities align with the prevailing societal boundaries and norms [39-41].

Legitimacy can be viewed as a mutual relationship between a company and society. In this dynamic, society grants legitimacy to a company, allowing it the right to establish facilities and conduct business activities. In return, the company is expected to provide benefits to the surrounding community and, at the very least, avoid causing harm, such as environmental damage. This social contract emphasizes the reciprocal nature of legitimacy, wherein a company is entrusted with certain privileges by the community, and in exchange, it is obligated to act responsibly and contribute positively to its social and environmental context.

Companies can acquire and sustain legitimacy from society by employing ESG disclosures [42]. Such disclosures serve as a means of communication from the company to stakeholders, demonstrating the company's adherence to prevailing societal norms. This practice indirectly reinforces the legitimacy gained from society and shapes stakeholder perceptions. These perceptions, in turn, impact the company's value in the eyes of stakeholders, including lending institutions, as it reflects a commitment to social responsibility [43]. The transparency provided by ESG disclosures contributes to building and maintaining trust with stakeholders, further enhancing the company's legitimacy.

Companies that have successfully established legitimacy within the community often experience smoother operations. This enhanced legitimacy translates into easier access to resources, including, notably, access to cost-effective funding and lower cost of debt [34-36]. The trust and positive perception earned from the community and stakeholders contribute to the company's overall resilience, facilitating its ability to secure resources necessary for sustained and efficient operations, particularly in terms of financial support and favorable debt terms.

2.3 Effect of ESG disclosure on cost of debt

The concept of sustainability performance entails a company's broader orientation that extends beyond short-term profit maximization [44]. It involves considering the impact of a company's operations on all stakeholders, encompassing communities, society, and the environment [30]. The motivation behind corporate ESG disclosure can be associated with legitimacy theory. Corporate legitimacy, as posited by this theory, is viewed as a vital organizational resource crucial for the company's survival, bestowed upon the organization by society.

Company ESG disclosure serves as a signal that

communicates the business's commitment to meeting stakeholder expectations [39]. In the context of legitimacy theory, an increase in company ESG disclosure is expected to result in a lower cost of debt. This is attributed to the fact that ESG disclosure reinforces the company's commitment to and relationships with stakeholders, fostering a sense of mutual trust. As a consequence, the risk of disruptions to company operations is reduced, enabling the company to maintain profitability and thereby lowering the risk of default [45].

Enhanced ESG disclosure is often viewed as more compliant with regulations [44, 46] and contributes to reducing information asymmetry problems [16]. Consequently, this transparency is associated with a lower cost of debt [20]. Companies that actively engage in ESG disclosures are perceived by creditors as having a lower risk of default. This positive perception leads to a favorable evaluation of creditworthiness, allowing these companies to secure lower or cheaper costs of debt.

Given the findings from prior research, such as Apergis et al. [26] on S&P 500 companies, which indicated a negative effect of ESG scores on the cost of debt, and Eliwa et al. [5], whose research explored the impact of both ESG disclosure and ESG performance on the cost of debt, revealing a negative influence, the first hypothesis for this research can be formulated as follows:

H1: *ESG disclosure has a negative effect on the cost of debt.*

3. METHODOLOGY

3.1 Data sources and samples

This research employs data from 288 non-financial companies listed on the Indonesia Stock Exchange for the period spanning 2017 to 2022. The sample consists of companies that have published sustainability reports (SR), resulting in a dataset with 742 observations. Measurements for the ESG variable are sourced from these sustainability reports. Additionally, the OSIRIS database is utilized for variables derived from financial reports and company annual reports. The exclusion of financial firms from the sample is a deliberate choice aimed at preventing biases in the results. This exclusion is justified by the highly regulated nature of the financial industry, encompassing SR-related regulations, and potential incomparability in terms of debt financing costs [5, 47, 48].

3.2 Dependent variable

The cost of debt (COD) is defined as the minimum level of profit demanded by lenders on company investments financed with debt. In alignment with previous research methodologies, the calculation of COD in this study involves dividing the interest expense by the total long-term debt. This measurement approach is consistent with methodologies employed in various studies, such as those conducted by Francis et al. [49], Gray et al. [50], Persakis and Iatridis [51], and Pittman and Fortin [52]. The summary of the measurements is presented in Table 1.

3.3 Independent variable

To measure the level of ESG disclosure, this study employs sentences as the unit of analysis, following the approach recommended by Li [53]. The assessment uses a checklist based on guidelines issued by the Global Reporting Initiative (GRI), an international organization under the auspices of the United Nations that provides standards for sustainability reporting for organizations, companies, and other institutions. GRI standards assist companies in measuring, understanding, and communicating their performance in terms of economic, environmental, and social impacts. This study covers 94 GRI items related to ESG information disclosure. Specifically, it includes 32 items under Environment (GRI 300), 40 items under Social (GRI 400), and 22 items under Governance (GRI 102) [27]. All GRI disclosure items can be accessed at www.globalreporting.org.

The ESG measurement involves using the ESG Score, which is calculated by comparing the amount of ESG information disclosed by a company with the total number of disclosure items. Each indicator is assigned a value of 1 for companies making ESG disclosures in accordance with the indicators, and a value of 0 for companies not making ESG disclosures for each respective indicator. The summary of the measurements is presented in Table 1.

Table 1. Summary of abbreviations, variables, operationalization, and expected sign

Abbreviations	Variable	Operationalization	Expected Sign
COD	Cost of Debt	Interest expense divided by total long-term debt	
ESGD	ESG Disclosure	Comparison of the amount of ESG disclosed by the company with the total number of disclosure items	Negative
SIZE	Firm Size	Natural logarithm of total assets	Negative
AGE	Firm Age	Natural logarithm of company age	Negative
LEV	Leverage	The ratio of total debt to total assets	Negative
ROA	Return on Asset	Net profit divided by total assets	Negative

3.4 Control variable

1) Firm size (SIZE) is considered as a variable for analysis. Past studies have consistently indicated that larger companies tend to have better risk management capabilities due to their robust financial and strategic positions [54, 55]. Larger companies are often associated with lower risks, leading to a smaller cost of debt, and conversely. Consistent with Gholami et al. [22], the measurement of company size can be operationalized using the natural logarithm of total assets.
2) Firm age (AGE) refers to the length of time a company has been in existence. It represents the duration from the initiation of operational activities until the company can establish itself or sustain its presence in the business world. Following the approach suggested by Pukthuanthong et al. [56], firm age can be measured using the natural logarithm of the company's age.
3) Leverage (LEV) is a metric that gauges the extent to which a company utilizes debt in its expenditures. The

relationship between leverage and cost of debt (COD) is typically negative, as higher leverage signifies greater dependence on debt financing, leading to an increase in COD [57]. In alignment with the approach suggested by Nicolò et al. [58], leverage can be quantified by dividing long-term debt by total assets.

4) Return on assets (ROA) is a financial metric that assesses a company's capacity to generate profits utilizing its resources, including assets, capital, or sales [59-61]. Companies with higher levels of profitability are generally perceived as having an enhanced ability to fulfill their debt obligations [62]. Consequently, an inverse relationship is anticipated between return on assets (ROA) and cost of debt (COD). ROA quantified by dividing net profit by total assets [63-66]. The summary of the measurements is presented in Table 1.

3.5 Econometric models

The following is the regression model used in this research:

$$COD_{i,t} = \beta_0 + \beta_1 ESGD_{i,t} \quad (1)$$

$$COD_{i,t} = \beta_0 + \beta_1 ESGD_{i,t} + \beta_2\ SIZE_{i,t} + \beta_3\ AGE_{i,t} + \beta_4\, LEV_{i,t} + \beta_5\, ROA_{i,t} + \varepsilon_{i.t} \quad (2)$$

In this research, Ordinary Least Square (OLS) regression techniques are employed to test hypotheses, utilizing STATA17 software. The data used in the study has undergone classical assumption tests, representing the initial requirement for conducting panel data regression analysis [67]. Additionally, the research conducted various other tests to ensure the robustness of the main results. Following the methodology of prior research [68, 69], the study utilized four alternative regression estimates, including OLS with robust standard error and Driscoll-Kraay standard error (SCC) regression. The analysis also incorporated fixed effect and random effect models to enhance the robustness of the results [67].

4. RESULTS AND DISCUSSION

4.1 Descriptive statistics

In this research, a preliminary test for normality is conducted before further testing. The exclusion of outliers is implemented to reduce inference errors, enhancing the accuracy of statistical analysis [70]. Additionally, the study performs tests for multicollinearity using the Variance Inflation Factor (VIF) and Pearson correlation coefficient [67].

The VIF results presented in Table 2 indicate low multicollinearity between variables for all non-financial firms, as evidenced by VIF values falling within an acceptable range. The highest VIF value is observed for SIZE at 1.31, while the lowest is for LEV at 1.06. When examining VIF values for each industry, the highest is for SIZE at 4.71 in the Transportation and Logistics industry, and the lowest is for AGE at 1.01 in the Property industry. Overall, the research model does not exhibit multicollinearity problems among the independent variables, as indicated by VIF values consistently below 10 [70]. This suggests that the variables are not highly correlated, and the model is not compromised by multicollinearity issues.

Table 2 presents descriptive statistical values, offering insights into the average level of cost of debt (COD) for non-financial companies in Indonesia, which is reported at 10 percent. The highest COD is observed in the Consumer Non-Cyclical industry at 75 percent, while the lowest is in the Basic Materials industry at 0.01 percent. The industry with the highest average COD is Transportation and Logistics at 14 percent, whereas the Energy industry has the lowest average COD at 7 percent.

Additionally, the average level of ESG disclosure for non-financial companies in Indonesia is relatively low, standing at approximately 36 percent. The highest ESG disclosure value is in the Basic Materials industry at 89 percent, while the Consumer Cyclical industry has the lowest ESG disclosure value at 5 percent. The Energy industry boasts the highest average ESG disclosure value at around 41 percent, whereas the Transportation and Logistics industry reports the lowest average ESG disclosure value at approximately 28 percent. Descriptive statistics for all variables, both for the overall sample and each industry type, are detailed in Table 2.

Table 3 presents the Pearson correlation coefficients for all variables, and it is observed that they are all below 0.90. This suggests the absence of multicollinearity problems between the variables, aligning with the guidelines provided by Hair [70].

4.2 Effect of ESG disclosure on cost of debt

The regression results presented in Table 4 for Model 1 and Model 2, as well as the results in Table 5 for various non-financial industries, support Hypothesis 1 (H1). These findings indicate a significant negative influence of ESG disclosure on the company's cost of debt. This pattern is consistent across all industries except the technology industry, where the results do not align with the hypothesis.

The lack of significant results in the technology industry may be attributed to the small sample size, which limits the ability to draw meaningful conclusions or observe statistical significance. The technology industry in Indonesia is relatively nascent, and the limited number of companies in the industry that publish sustainability reports may contribute to this challenge.

Table 2. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Dev	VIF
			All Non-Financial Firm			
COD	743	0.0001	0.7529	0.1066	0.1065	
ESGD	743	0.0532	0.8936	0.3634	0.1387	1.06
SIZE	743	24.8485	33.6552	29.662	1.7642	1.31
AGE	743	1.0986	4.7536	3.4830	0.6316	1.15
LEV	743	0.0004	1.8911	0.2171	0.1956	1.16
ROA	743	-0.6312	0.9209	0.0433	0.1175	1.21
			Basic Material			

COD	137	0.0001	0.5677	0.1162	0.1132	
ESGD	137	0.1064	0.8936	0.3801	0.1617	1.23
SIZE	137	25.3401	32.6006	29.4079	1.7584	1.49
AGE	137	1.0986	4.6634	3.5620	0.5805	1.13
LEV	137	0.0004	0.6563	0.1759	0.1589	1.31
ROA	137	-0.4991	0.2491	0.0307	0.0776	1.12
Consumer Cyclical						
COD	85	0.0022	0.6579	0.1019	0.0919	
ESGD	85	0.0532	0.6383	0.3486	0.1146	1.15
SIZE	85	24.8493	31.0953	28.2766	1.6596	1.51
AGE	85	1.9459	4.2626	3.3550	0.6398	1.51
LEV	85	0.0053	30.1008	0.2293	0.2364	1.76
ROA	85	-1.5302	4.7763	0.0163	0.0979	1.85
Consumer Non-Cyclical						
COD	143	0.0002	0.7529	0.1160	0.1210	
ESGD	143	0.1596	0.7766	0.3787	0.1221	1.11
SIZE	143	24.9392	32.8263	29.4224	1.5680	1.25
AGE	143	1.7917	4.7535	3.6152	0.5913	1.27
LEV	143	0.0028	0.7742	0.1865	0.1605	1.38
ROA	143	-0.2510	0.5265	0.0660	0.1167	1.38
Energy						
COD	104	0.0164	0.5881	0.0744	0.0491	
ESGD	104	0.1383	0.8511	0.4150	0.1646	1.44
SIZE	104	25.0811	32.7540	29.9517	1.5673	1.84
AGE	104	1.7917	4.6347	3.4660	0.5941	1.46
LEV	104	0.0072	0.9406	0.2752	0.2120	1.78
ROA	104	-0.3156	0.5925	0.0715	0.1609	1.65
Healthcare						
COD	41	0.0013	0.7208	0.1086	0.1159	
ESGD	41	0.1809	0.7021	0.3889	0.0992	1.31
SIZE	41	27.4156	30.9357	29.0295	1.0593	1.26
AGE	41	3.0910	4.6443	3.8960	0.4168	1.17
LEV	41	0.0085	0.5135	0.1138	0.1234	1.47
ROA	41	-0.2793	0.9209	0.1014	0.1636	1.24
Industrials						
COD	44	0.0175	0.4544	0.1242	0.0923	
ESGD	44	0.1809	0.7128	0.3042	0.1271	1.12
SIZE	44	26.5838	33.6551	29.8228	2.1310	1.32
AGE	44	2.4849	4.3567	3.6383	0.4342	1.82
LEV	44	0.0128	0.5046	0.1593	0.1267	1.52
ROA	44	-0.1677	0.1808	0.0447	0.0633	1.35
Infrastructure						
COD	88	0.0040	0.6624	0.1025	0.0848	
ESGD	88	0.1383	0.6277	0.3269	0.1109	1.15
SIZE	88	25.6022	33.2557	30.4132	1.7427	1.82
AGE	88	1.9459	4.2341	3.3683	0.6287	1.57
LEV	88	0.0098	1.2103	0.3105	0.2255	1.59
ROA	88	-0.6312	0.1558	0.0131	0.0928	1.24
Property and Real Estate						
COD	64	0.0006	0.6210	0.0912	0.1090	
ESGD	64	0.1277	0.7553	0.3290	0.1355	1.47
SIZE	64	24.8485	31.7495	29.3098	1.6244	1.71
AGE	64	1.0986	4.2341	3.0912	0.7617	1.01
LEV	64	0.0010	0.5236	0.2287	0.1404	1.23
ROA	64	-0.0651	0.2756	0.0064	0.0573	1.24
Technology						
COD	13	0.0067	0.4195	0.1109	0.1087	
ESGD	13	0.1809	0.5213	0.3486	0.1170	2.27
SIZE	13	28.6319	31.4258	29.7580	1.1112	1.81
AGE	13	2.3025	3.8501	3.2837	0.6336	2.80
LEV	13	0.0036	0.4382	0.0915	0.1424	4.35
ROA	13	-0.1047	0.2054	0.0686	0.0862	2.01
Transportation and Logistics						
COD	23	0.0039	0.6384	0.1487	0.1393	
ESGD	23	0.1809	0.4468	0.2840	0.0639	1.59
SIZE	23	25.7492	32.6515	28.8893	2.2439	4.71
AGE	23	1.9459	32.2063	3.1933	0.7752	3.54
LEV	23	0.0195	1.0470	0.3787	0.3009	1.38
ROA	23	-0.5782	0.5995	0.0077	0.2194	1.03

Table 3. Pearson correlation

	COD	ESGD	SIZE	AGE	LEV	ROA		COD	ESGD	SIZE	AGE	LEV	ROA
	All Non-Financial Firm							*Industrials*					
COD	1						COD	1					
ESGD	**-0.243**	1					ESGD	**-0.385**	1				
SIZE	**-0.253**	**0.284**	1				SIZE	-0.155	0.187	1			
AGE	**-0.101**	**0.158**	**0.318**	1			AGE	0.245	-0.163	0.254	1		
LEV	**-0.216**	0.032	**0.239**	-0.067	1		LEV	**-0.303**	0.159	0.000	**-0.513**	1	
ROA	**-0.122**	**0.158**	**0.110**	**0.167**	**-0.361**	1	ROA	**-0.457**	0.253	0.263	-0.246	-0.040	1
	Basic Material							*Infrastructure*					
COD	1						COD	1					
ESGD	**-0.264**	1					ESGD	**-0.297**	1				
SIZE	**-0.237**	**0.222**	1				SIZE	**-0.440**	**0.334**	1			
AGE	-0.167	**0.322**	**0.537**	1			AGE	0.015	**0.219**	**0.473**	1		
LEV	-0.211	0.111	0.073	0.139	1		LEV	**-0.339**	**0.180**	**0.336**	-0.125	1	
ROA	0.016	0.129	**0.249**	0.131	**-0.595**	1	ROA	-0.140	0.037	0.061	-0.048	**-0.327**	1
	Consumer Cyclical							*Property and Real Estate*					
COD	1						COD	1					
ESGD	**-0.264**	1					ESGD	**-0.278**	1				
SIZE	**-0.237**	**0.222**	1				SIZE	-0.197	**-0.547**	1			
AGE	-0.167	**0.322**	**0.537**	1			AGE	0.062	0.035	0.097	1		
LEV	-0.211	0.111	0.073	0.139	1		LEV	-0.190	**0.274**	**0.247**	-0.053	1	
ROA	0.016	0.129	**0.029**	0.131	**-0.595**	1	ROA	**-0.343**	0.097	**0.323**	0.043	-0.197	1
	Consumer Non-Cyclical							*Technology*					
COD	1						COD	1					
ESGD	**-0.216**	1					ESGD	-0.309	1				
SIZE	**-0.365**	**-0.221**	1				SIZE	-0.330	0.016	1			
AGE	-0.146	-0.068	**0.252**	1			AGE	-0.041	-0.044	-0.024	1		
LEV	**-0.168**	**0.264**	**0.266**	-0.164	1		LEV	-0.249	-0.378	-0.378	**-0.563**	1	
ROA	-0.084	-0.061	0.123	**0.398**	**-0.377**	1	ROA	**-0.670**	**0.587**	0.118	0.258	0.245	1
	Energy							*Transportation and Logistics*					
COD	1						COD	1					
ESGD	**-0.340**	1					ESGD	**-0.530**	1				
SIZE	**-0.379**	**0.422**	1				SIZE	-0.202	-0.367	1			
AGE	**-0.403**	**0.440**	**0.478**	1			AGE	-0.313	-0.049	**0.801**	1		
LEV	**-0.219**	-0.113	**0.269**	-0.066	1		LEV	**-0.537**	0.059	**0.445**	0.372	1	
ROA	-0.182	**0.302**	0.189	0.187	**-0.518**	1	ROA	-0.074	0.094	-0.059	-0.059	-0.093	1
	Healthcare												
COD	1												
ESGD	**-0.322**	1											
SIZE	-0.093	0.050	1										
AGE	0.023	-0.203	**-0.337**	1									
LEV	0.053	**-0.409**	**-0.328**	0.222	1								
ROA	-0.226	**0.348**	-0.031	-0.047	**-0.356**	1							

Bold Correlation is significant at the 0.05 level (2-tailed).

Table 4. Hypothesis testing and result (OLS regression)

	(1)	(2)
Constant	0.172***	0.406***
	(15.84)	(6.68)
ESGD	-0.182***	-0.128***
	(-6.83)	(-4.78)
SIZE		-0.007***
		(-3.09)
AGE		-0.004
		(-0.66)
LEV		-0.127***
		(-6.29)
ROA		-0.145***
		(-4.36)
Obs	742	742
R^2	0.059	0.147
Adj R^2	0.058	0.132

*, **, *** significant at the 10, 5, and 1 percent levels
( ) : t-statistics values

Table 5. Regression results for each industry

	Basic Material		Consumer Cyclical		Consumer Non-Cyclical		Energy		Healthcare	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Const	0.159***	0.298*	0.176***	0.453**	0.197***	0.885***	0.117***	0.215**	0.255***	0.904
	(6.46)	(1.73)	(5.65)	(2.55)	(6.08)	(4.76)	(9.39)	(2.32)	(3.59)	(1.37)
ESGD	-0.112*	-0.110*	-0.212**	-0.166**	-0.214***	-0.136*	-0.102***	-0.050*	-0.376**	-0.400*
	(-0.15)	(-1.73)	(-2.50)	(-1.84)	(-2.62)	(-1.67)	(-3.65)	(-1.67)	(-2.12)	(-1.92)
SIZE		0.001		-0.010		-0.022***		0.000		-0.018
		(0.13)		(-1.44)		(-3.24)		(0.034)		(-0.96)
AGE		-0.036**		0.004		-0.015		-0.025***		-0.019
		(-2.13)		(0.24)		(-0.84)		(-3.033)		(-0.41)
LEV		-0.170**		-0.077		-0.070		-0.094***		-0.180
		(-2.55)		(-1.43)		(-1.01)		(-3.66)		(-1.01)
ROA		-0.200		-0.031		-0.065		-0.087***		-0.130
		(-1.59)		(-0.23)		(-0.685)		(-2.68)		(-1.06)
Obs	137	137	85	85	143	143	104	104	41	41
R^2	0.025	0.129	0.070	0.135	0.047	0.165	0.116	0.320	0.104	0.155
Adj R^2	0.018	0.096	0.059	0.080	0.040	0.135	0.107	0.285	0.081	0.034
	Industrials		**Infrastructure**		**Technology**		**Transportation and Logistics**		**Property and Real Estate**	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Const	0.209***	0.262	0.177***	0.677***	0.211*	1.669	0.467***	1.008*	0.165***	-0.072
	(6.14)	(1.40)	(6.50)	(4.52)	(2.16)	(1.64)	(4.06)	(1.83)	(4.72)	(-0.262)
ESGD	-0.279***	-0.174*	-0.227***	-0.126*	-0.287	0.366	-1.154***	-1.277***	-0.224**	-0.195*
	(-2.70)	(-1.74)	(-2.88)	(-1.69)	(-1.08)	(1.139)	(-2.86)	(-2.95)	(-2.28)	(-1.73)
SIZE		0.001		-0.020***		-0.049		-0.015		0.008
		(0.09)		(-3.322)		(-1.62)		(-0.69)		(0.03)
AGE		-0.011		0.028*		-0.038		-0.001		0.009
		(-0.287)		(1.85)		(-0.58)		(-0.025)		(0.552)
LEV		-0.224*		-0.075*		-0.474		-0.186**		-0.180*
		(-1.93)		(-1.74)		(-1.29)		(-2.17)		(-1.81)
ROA		-0.619***		-0.149		-0.797*		-0.041		-0.777***
		(-2.82)		(-1.61)		(-1.94)		(-0.40)		(-3.18)
Obs	44	44	88	88	13	13	23	23	64	64
R^2	0.148	0.364	0.088	0.322	0.096	0.631	0.280	0.580	0.077	0.231
Adj R^2	0.128	0.280	0.077	0.281	0.014	0.368	0.246	0.457	0.062	0.165

*, **, *** significant at the 10, 5, and 1 percent levels
( ): t-statistics values

However, despite the inconclusive results in the technology industry, the overall findings of this study align with previous research conducted in the context of developed countries. Notably, the results are consistent with studies such as those by Apergis et al. [26] on S&P 500 companies and Eliwa et al. [5] on 15 EU countries. These consistent findings across different contexts strengthen the robustness and generalizability of the observed negative relationship between ESG disclosure and the cost of debt.

In line with legitimacy theory, the findings of this study suggest that the disclosure of a company's ESG performance contributes to a reduction in the cost of capital (COC) by influencing the perceptions of financial resource providers [22]. ESG disclosure plays a role in diminishing information asymmetry between companies and lenders, facilitating lending institutions in evaluating the risk of borrower default [4]. The research results indicate that companies, both in developed and developing countries, receive favorable treatment from lenders when they exhibit higher transparency in reporting ESG information. This favorable treatment manifests in the form of lower costs of capital, underscoring the importance of reduced information asymmetry in shaping financial relationships.

Indeed, companies with higher ESG disclosure are perceived as having lower business risk. ESG disclosure enhances a company's commitment to and relationships with stakeholders, fostering a sense of mutual trust. This, in turn, contributes to a lower risk of disruptions to company operations. The establishment of strong relationships and trust with stakeholders positions the company to weather challenges more effectively. As a result, these companies are better equipped to sustain profitability, reducing the risk of default. This aligns with the notion that a robust ESG framework not only addresses environmental and social concerns but also contributes to overall risk management and resilience in the face of uncertainties [45].

4.3 Robustness test

Tables 6 and 7 provide regression results utilizing four panel data regression models, demonstrating the robustness of the analysis. Regression analysis, employing different models, serves as a robustness test and confirms the consistency of the results with the main findings. This approach enhances the reliability and validity of the study by showcasing that the observed relationships between ESG disclosure and the cost of debt persist across various model specifications. The use of multiple regression models contributes to a more comprehensive understanding and reinforces the confidence in the reported outcomes.

Table 6. Robustness test with OLS standard error and SCC model

	OLS Standard		SCC Model	
	(1)	(2)	(1)	(2)
Constant	0.172***	0.407***	0.144***	0.376***
	(14.59)	(5.94)	(45.92)	(13.86)
ESGD	-0.182***	-0.128***	-0.199***	-0.139***
	(-7.13)	(-5.66)	(-18.55)	(-18.06)
SIZE		-0.007***		-0.006***
		(-3.15)		(-4.09)
AGE		-0.004		-0.003
		(-0.54)		(-0.37)
LEV		-0.127***		-0.128***
		(-7.06)		(-31.34)
ROA		-0.145***		-0.147***
		(-4.21)		(-8.94)
Obs	742	742	742	742
R^2	0.059	0.147	0.069	0.149

*, **, *** significant at the 10, 5, and 1 percent levels
( ) : t-statistics values

Table 7. Robustness test with fix effect model and random effect model

	FEM		REM	
	(1)	(2)	(1)	(2)
Constant	0.126***	0.074	0.146***	0.476***
	(15.44)	(0.17)	(15.09)	(4.77)
ESGD	-0.055**	-0.070***	-0.087***	-0.061***
	(-2.53)	(-2.90)	(-4.24)	(-3.04)
SIZE		-0.007		-0.009**
		(-0.49)		(-2.44)
AGE		0.091**		-0.012
		(2.03)		(-1.27)
LEV		-0.208***		-0.168***
		(-8.01)		(-8.25)
ROA		-0.072***		-0.093***
		(-2.60)		(-3.68)
Obs	742	742	742	742
R^2	0.014	0.141	0.097	0.148

*, **, *** significant at the 10, 5, and 1 percent levels
( ) : t-statistics and z-statistics values

5. CONCLUSION

The primary objective of this paper is to enhance our comprehension of the implications of ESG disclosure within the context of developing countries. The focus is particularly on investigating whether Indonesian companies receive favorable treatment from lending institutions in the form of reduced costs of debt capital as a result of their ESG disclosure practices. Drawing on a sample of non-financial companies, comprising 742 observations and segmented into ten industries, our findings indicate that companies stand to benefit from high levels of ESG disclosure. Specifically, this benefit manifests in the form of easier access to funding, translating into a lower cost of capital charged by lending institutions.

The findings of this study have both academic and practical implications. New insights into the relationship between ESG practices and the cost of debt suggest that ESG practices offer benefits not only for companies in developed countries but also for those in developing countries. Consequently, these findings may provide valuable considerations for regulators and policymakers contemplating the adoption of ESG practices within their respective contexts. In the context of Indonesia, the results of this study could inform stricter policies related to ESG disclosure. While ESG disclosure is currently regulated under Indonesia's Financial Services Authority Regulation No. 51 of 2017, this regulation lacks clear rewards and penalties, resulting in numerous public companies in Indonesia still not disclosing ESG information. Therefore, these findings could support the establishment of more effective reward and penalty systems, given the demonstrated positive impact of ESG activities and disclosures on various stakeholders. Furthermore, companies can leverage these findings to enhance their ESG disclosures, foster better practices, and potentially benefit from related advantages, such as reduced debt costs.

Although this research makes a significant contribution, it still has some limitations. First, this study focuses solely on ESG reporting derived from corporate sustainability reports. Due to the lack of discipline among some companies in Indonesia in publishing sustainability reports, this may result in a limited dataset. Future research might explore additional sources of ESG information, such as company websites, annual reports, and AGMs, to gain a more comprehensive understanding of ESG practices and their impact on the cost of debt. Second, this study employs a single measurement to assess the cost of debt. Future research could utilize alternative measurements, such as bond yields, to achieve more comprehensive results. Additionally, future studies may consider incorporating other variables, such as the cost of equity, to examine the impact of ESG disclosure from an investor's perspective.

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