

Does Doing Good Diminish Cost of Capital? Evidence From South-East Asia Markets

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Abstract

Purpose: The ultimate goal of this study is to reassess the impact of ESG on the cost of capital.

Methodology: This work is quantitative type using secondary data collected by Thomson & Reuters and World Bank. There are 247 sample companies in the 2009 – 2021 period spread across five Southeast Asian countries. The research uses the fixed effect method at the industrial level and the instrumental variable regression technique, which is estimated using the generalized moment method (GMM) to accommodate endogeneity.

Findings: The ESG, ENVI, and SOCI coefficients are negative and statistically significant at the 1% level, further confirming that ESG performance is negatively associated with the cost of capital. Environmental and social aspects determine the level of the cost of capital. Meanwhile, governance issues are not a determining factor that can reduce the cost of capital.

Novelty: Numerous studies have revealed inconclusive outcomes regarding the effectiveness of ESG in decreasing the cost of capital, particularly in Asian nations owing to their subpar institutional quality. This research seeks to bridge this gap by examining this relationship in the Southeast Asian countries.

Keywords: Environment, Social, Governance, Cost of Capital, South-East Asia

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Introduction

Capital budgeting is a crucial component in cost management discussions because it pertains to managerial decisions in allocating external funding sources. Several tools are used to evaluate the feasibility of corporate projects, including Net Present Value and Internal Rate of Return. Both techniques employ a discounted cash flow (DCF) framework, which requires estimates of future cash flows and the cost of capital required by investors. Future cash flows may not materialize, while the company is certain to pay the cost of capital to investors. Thus, the discussion of key determinants of the cost of capital, which has not been extensively studied in previous research, has become an urgent issue for companies.

The last two decades have seen a proliferation of scandals involving major corporations such as Enron and Lehman Brothers, which have adversely affected investor credibility. Practices that prioritize the pursuit of profit through the exploitation of natural resources and disregard for social welfare have contributed to environmental degradation and socio-economic inequality. Sustainability concerns have emerged as a significant focus for all stakeholders, leading the G20 countries to establish the Green

Finance Study Group in 2016 (Galletta et al., 2022). The breadth of sustainability pertains to various dimensions including environmental, social, and governance (ESG) facets.

Investors' perception of risk can be impacted by a company's commitment to sustainability, leading to potential implications for the cost of capital. Several studies provide three theoretical foundations that can explain the conjunction between the implementation of ESG principles and the cost of capital (Feng et al., 2015; Prasad et al., 2022; Yeh et al., 2020). The theory of market equilibrium provides an explanation that sustainability practices may offer a means to diversify funding sources, thus leading to a decrease in capital costs. Asymmetric information, the underlying factor in agency issues, serves as a catalyst for conflicts of interest. As such, transparency in relation to sustainability practices can bridge the information gap between agents (managers) and principals (shareholders), thereby reducing capital costs. Moreover, engaging in activities that promote environmental, social, and governance issues may serve as a positive indicator of a company's altruistic intentions.

Several studies have demonstrated a negative association between ESG and the cost of capital for companies in the US market (El Ghoul et al., 2011; Ng & Rezaee, 2015) and some countries (Feng et al., 2015). Various research has proven that ESG has a negative correlation with the cost of capital of firms in the US and cross-country setting. The impact of ESG on the decline in the cost of capital is more significant in Europe and North America than in Asia. This outcome is attributable to institutional quality, such as the deficiency of law enforcement in Asian countries (El Ghoul et al., 2017). Moreover, Breuer et al. (2018) verified that the effectiveness of ESG in lowering the cost of capital is contingent upon the level of investor protection provided by the local authorities.

Considering the developing nature of Asian markets, the recent findings by Wang et al. (2021) reveal the opposite result. ESG increases the cost of capital, particularly in equity, due to the intense agency problems in Asian countries. Their findings challenge Feng et al. (2015) promoting ESG as cost-diminishing. Meanwhile, studies conducted in Southeast Asian countries are still limited. From the limited and debated empirical results, this research aims to test the association between ESG and the cost of capital in Southeast Asian countries.

Literature Review

Environmental damage, social inequality, injustice, and unethical business majorly impact welfare. Global warming caused by excessive accumulation of fossil fuel waste impacts climate change. The greed of business leads to the over-exploitation of nature and people, causing natural disasters and economic inequality. During these two decades, the business world was exposed to scandals involving large companies such as Enron in 2000 and Lehman Brothers in 2007. The two cases triggered an economic crisis that had a global impact.

Highlighting the problems above, the United Nations initiated the concept of sustainability, which can be defined as meeting the needs of the present without compromising the needs of future generations. Sustainability is related to the triple bottom line: profit, people and planet. The corporate's goal is to seek profit and care about human development and environmental sustainability. The terms environment, social and, governance (ESG) first appeared in 2006 in the United Nations' Principles for Responsible Investment (PRI) report to accommodate all aspects of sustainability (Gillan et al., 2021). For investors, these three aspects provide a more straightforward measure of the firm's sustainability performance.

Feng et al. (2015) documented the economic reasons underlying the link between corporate philanthropy and the cost of capital. First, market equilibrium theory suggests that high-ESG firm can reach a diverse investor base. It can facilitate the diversification of funding to reduce the cost of capital. Second, agency theory leads to asymmetric information between principals (investors) and agents

(managers), causing a conflict of interest. Transparency in firms' voluntary disclosure of environmental and social activities can mitigate the discrepancy between managers and investors so that investors' perception of risk can be reduced, and the cost of capital can be reduced. The profile is in a company with a superior concern for ESG. The third relates to the preference behaviour of investors. Ethical investors internalize the values they believe in allocating their portfolios. When ethical aspects are included in the total utility function, investors tend to set a reasonable required rate of return.

In more detail, Giese et al. (2019) explained the transmission mechanism of ESG's impact on the cost of capital, namely, the systematic-risk channel. Market systematic risk can be mitigated by implementing ESG principles. For example, companies that use energy efficiently have low exposure to changes in energy prices, so their stock prices tend to be more resilient to systematic market risk. In the CAPM model, the lower the systematic risk as measured by beta, the lower the required rate of return set by investors, and the lower the company's cost of capital.

In some recent research, Yeh et al. (2020) and Prasad et al. (2022) introduced signaling theory as an economic argument for the relationship between sustainability values and funding costs. ESG-based activities provide signals to investors as a consideration in decisions about how much to invest and the price to be paid by the company. ESG implementation, therefore, is considered an effective mechanism for reducing the cost of capital.

The first study to prove the benefits of concern for sustainability in reducing the cost of capital was El Ghoul et al. (2011) by observing 12,915 firm-year samples from 1992 to 2007 in the US markets. Ng & Rezaee (2015) also gave the same results with a larger sample of 3000 firms during 1990 - 2013. Feng et al. (2015) expanded the scope of the study by investigating 10,803 firm-year observations in 25 countries. The study results conclude that the negative effect of ESG on the cost of capital is more robust in North American and European countries than in Asian ones. ESG-activity reporting standards in Asian countries need to be established by policymakers to increase public understanding and awareness of ESG-related information issued by firms. Institutional and cultural aspects are also responsible for the reduced role of ESG activities in reducing the cost of capital. Poor law enforcement, weak regulatory quality, and widespread corruption are why corporate concern for sustainability issues is less effective in Asian countries (El Ghoul et al., 2017).

Using more updated samples, 3660 firms from 2002 - 2015 across 39 countries, then 19183 observations in total, Breuer et al. (2018) showed that high ESG performance leads to a low cost of equity capital. In addition, they also amplify the urgency of protecting investors on how effective ESG can be in reducing the cost of capital. Only in countries with strong investor protection can investment in sustainability lower the cost of capital, whereas, in countries with weak investor protection, it does the opposite.

Following Feng et al.'s (2015) findings, Wang et al. (2021) conducted specific work in East Asian economies, including Japan, South Korea, Hong Kong, Taiwan, Thailand, Philippines, Malaysia, Singapore, and Indonesia. They contradict previous research that ESG increases the cost of equity. The high agency conflict in East Asian countries is the background of these findings. Managers can exploit the bright side of ESG for their interests at the expense of shareholder wealth. Over-investment in ESG activities arguably increases investors' risk appetite and further the cost of capital.

Wang et al. (2021) did not include Chinese firms in their study. Meanwhile, the following two studies support ESG as a reduction in the cost of capital in the Chinese context. Yeh et al. (2020) confirmed that the higher the ESG performance firms have, the lower the cost of debt capital investors charge. Investigating firms in China as well, Chen & Zhang (2021) evidenced that ESG performance effectively reduces the cost of equity capital. A study in a South Asian context, India, also supports the

bright-side view of ESG performance in mitigating the cost of capital. Taking a sample of 512 non-financial firms, Prasad et al. (2022) proved that higher ESG-graded firms have lower costs of debt capital, even though their costs of equity capital are higher instead.

A strand of articles reviewed above provides some essence. First, the relationship between sustainability performance and the cost of capital is unclear due to cultural and institutional factors that vary in each context. Second, studies discussing the effect of sustainability and the cost of capital (combined equity and debt) in ASEAN are still limited. The latest study by Gracia & Siregar (2021) concluded that sustainability performance is negatively associated with the cost of debt. From these reasons, we formulate the following hypotheses:

H1: ESG performance is negatively associated with cost of capital

Methodology

Types of research

This research intends to validate the importance of sustainability issues in reducing a firm's cost of capital. Given the aim, the type of this work is quantitative research using secondary data collected by institutions. Therefore, Neuman (2014) categorized it as existing-statistic method.

Population And Samples

The sample used is non-financial firms in the Southeast Asia region. There are 247 sample companies in the 2009 – 2021 period spread across five Southeast Asian countries. Details of the distribution of firms can be seen in Table 3. The criterion in determining the observation is non-financial companies that do not post negative equity and are included in the ESG assessment by Thomson & Reuters.

Data Types and Collection

Table 1 provides information on the definitions and calculations of the dependent (cost of capital), independent (ESG) and control (the natural log of total assets, debt-to-asset ratio, market-to-book ratio, return-on-equity ratio, GDP growth, and inflation rate) variables. The firm's financial data (firms-specific variables) is from the Refinitiv Eikon datastream, while the macroeconomic data (state-specific variables) is from the World Development Indicators released by the World Bank.

Table 1. Definition and calculation of each variable

	Definition	Data source
Cost of capital (CoC)	To measure the cost of capital, I use calculation as follow: $CoC_{ict} = \omega_b r_b \cdot \omega_{cs} r_{cs} \cdot \omega_{ps} r_{ps}$ ω_b , ω_{cs} , dan ω_{ps} is the percentage weight on each financing source, namely bonds, common stock, and preferred stock. r_b , r_{cs} , and r_{ps} is a cost on each financing sources.	Refinitiv Eikon
ESG performance	Sustainability performance is determined by the extent to which the company cares about environmental, social and governance (ESG) issues. This research uses ESG scores published by Thomson & Reuters.	Refinitiv Eikon
Firm-specific variables	Firm-specific information which is relevant to explain the cost of capital includes the natural log of total assets (LNTA), debt-to-asset (DTA) ratio, market-to-book (MB) ratio, and return-on-equity (ROE) ratio (El Ghoual et al., 2011; Prasad et al., 2022).	Refinitiv Eikon
State-specific variables	Macroeconomic factors are also important determinants of the cost of capital since they are rooted in financial market information. The factors are the growth of gross domestic product (GDPG) and inflation rate (INF).	World Development Indicators, World Bank

Equation (1) expresses the regression model. Giese et al. (2019) and Krüger (2015) highlight the problem of correlation and causality in the nexus between ESG and risk factors. Correlation can be a two-way relationship, while causality is a one-way relationship (cause-effect link). Therefore, all independent and control variables are transformed into first-order lag form to mitigate the bi-directional relationship between ESG performance and cost of capital.

$$CoC_{ict} = \beta_0 + \beta_1 ESG_{ict-1} + \beta_1 LNTA_{ict-1} + \beta_2 DTA_{ict-1} + \beta_3 MB_{ict-1} + \beta_4 ROE_{ict-1} + \beta_5 GDPG_{ct-1} + \beta_6 INF_{ct-1} + \varepsilon_{ict} \quad (1)$$

To estimate equation (1), this research uses the fixed effect method at the industrial level, as applied by El Ghoual et al. (2011) and Chen & Zhang (2021). Incorporating fixed effects into the model also aims to overcome the issue of heterogeneity in panel data (Wooldridge, 2020). Standard errors are clustered at the company level to relax the assumptions of heteroscedasticity and autocorrelation (Petersen, 2009).

To ensure that the baseline results accommodate the endogeneity problem, equation (1) is also estimated using the instrumental variable regression technique, which is estimated using the generalized moment (GMM) method, hereafter referred to as the IV-GMM, in the robustness check. The validity of the IV-GMM can be determined from the Kleibergen-Paap (KP) and Hansen indicators. The KP value is expected to be statistically significant, at least at the 5% level, so the endogenous variable, ESG, is correlated with the instrumental variables. In addition, the Hansen value is expected to be statistically insignificant, at least at the 5% level, so the instrumental variables are not correlated with the term error. Finally, the IV-GMM model is valid and can be inferred. The instrumental variables are the world

governance indicators consisting of Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Rule of Law, and Control of Corruption.

Results and Discussion

Table 2 shows descriptive statistics for the dependent, independent, and control variables at all observations. The average cost of capital in a sample of non-financial firms in Southeast Asian countries is 7.46%. The average ESG score is 48.54, which is 41.66 - 50.00, so it is included in the C+ criteria by Thomson Reuters (2018). Compared to other countries (see Table 3), Indonesia's sample of non-financial firms has the highest average cost of capital and the lowest ESG value. The country with the highest sustainability performance profile among ASEAN is Thailand. In addition, companies listed on the Singapore Stock Exchange have the lowest cost of capital compared to the other four countries. The relatively high cost of capital in Indonesia is closely related to the intensity of asymmetric information. Then, investors expect higher returns to compensate for risk.

Table 2. Statistic Descriptive

Variable	Obs.	Mean	Std. dev.	Min	Max
CoC	1,041	7.463	2.929	0.396	20.54
ESG	1,041	48.54	19.33	5.085	89.81
LNTA	1,041	21.96	1.213	18.55	25.16
DTA	1,041	0.539	0.188	0.022	0.934
MB	1,030	3.798	6.996	0.119	61.81
ROE	1,041	0.157	0.300	-1.503	3.317
GDPG	1,041	2.219	4.474	-9.573	7.149
INF	1,041	1.442	1.818	-1.139	6.363

Table 3. ESG and cost of capital profile between south-east Asia economies

	Observation		Mean	
	Firms	Total	CoC	ESG
Indonesia	43	218	9.97	43.43
Malaysia	57	285	6.58	48.92
Philippine	23	130	8.05	44.95
Singapore	34	125	5.83	48.83
Thailand	90	283	6.87	53.60

Table 4 presents the results of the primary regression analysis. Column (1) contains the coefficient values and t-statistics of the equation intended to test the effect of ESG on the cost of capital. The R-Square of 0.204 indicates that the independent variables can explain 20.4% of the variation in the cost of capital. The ESG coefficient is -0.014 and is statistically significant at the 5% level. An increase of one unit ESG score can reduce the cost of capital by 0.014%. Besides that, it can also be concluded that ESG is negatively associated with the cost of capital, so hypothesis 1 is supported.

Table 4, column (2) - (4) shows the regression of each sustainability component. The ENVI (Column 2) is -0.016 statistically significant at the 1% level, SOCI (Column 3) is -0.008 statistically significant at the 10% level, and GOVE (Column 4) is not statistically significant. These figures show that environmental aspects are the most effective sustainability component in reducing capital costs. The sensitivity of environmental aspects to the cost of capital is even higher than the overall ESG component.

Table 4. Baseline regression

	(1)	(2)	(3)	(4)
	CoC _{ict}	CoC _{ict}	CoC _{ict}	CoC _{ict}
ESG _{ict-1}	-0.014** (-2.305)			
ENVI _{ict-1}		-0.016*** (-3.263)		
SOCI _{ict-1}			-0.008* (-1.792)	
GOVE _{ict-1}				-0.003 (-0.713)
LNTA _{ict-1}	-0.116 (-1.021)	-0.052 (-0.451)	-0.137 (-1.241)	-0.186* (-1.691)
DTA _{ict-1}	-1.745** (-2.430)	-1.730** (-2.432)	-1.867*** (-2.960)	-1.792** (-2.450)
MB _{ict-1}	0.053 (1.199)	0.051 (1.178)	0.051* (1.726)	0.045 (0.973)
ROE _{ict-1}	-0.154 (-0.165)	-0.032 (-0.035)	-0.135 (-0.186)	-0.129 (-0.135)
GDPG _{ct-1}	0.560*** (7.434)	0.570*** (7.638)	0.560*** (6.336)	0.569*** (7.587)
INF _{ct-1}	0.320*** (4.813)	0.296*** (4.447)	0.335*** (5.153)	0.344*** (5.023)
C	8.105*** (3.311)	6.660*** (2.656)	8.397*** (3.519)	9.139*** (3.765)
Ind. FE	Yes	Yes	Yes	Yes
Obs.	778	778	778	778
R2	0.204	0.211	0.200	0.198

The dependent variable is the weighted average cost of capital (CC). Independent variables are sustainability aspects which are environment (ENVI), social (SOCI), and governance (GOVE) scores. Control variables are natural log of total asset (LNTA), debt-to-asset (DTA), market-to-book ratio (MB), return-on-equity ratio (ROE), growth of gross domestic product (GDPG), and inflation rate (INF). Fixed effects are included at the industry level. T-statistics in parentheses. *, **, and *** denote significant at 10%, 5%, and 1%.

Robustness analysis (Table 5) is intended to confirm the baseline regression results using the IV-GMM method. The method's validity is determined from the statistical value of Klaibergen-Paap (KP) and Hansen. In Table 5, KP Stat. (Column 1) is statistically significant at the 1% level, and so is the KP Stat. in Columns 2 and 3. Meanwhile, Hansen's statistic is not statistically significant in all Columns. Overall, it can be said that the instrumental variables are correlated with the endogenous variable but not correlated with the error term. Hence, the IV-GMM estimation results can be considered unbiased.

The ESG, ENVI, and SOCI coefficients are negative and statistically significant at the 1% level, further confirming that ESG performance is negatively associated with the cost of capital. Environmental and social aspects determine the level of the cost of capital. Meanwhile, governance issues are not a determining factor that can reduce the cost of capital.

Table 5. Robustness check

	(1) CoC _{ict}	(2) CoC _{ict}	(3) CoC _{ict}	(4) CoC _{ict}
ESG _{ict-1}	-0.108*** (-3.601)			
ENVI _{ict-1}		-0.065*** (-3.488)		
SOCI _{ict-1}			-0.083*** (-3.628)	
GOVE _{ict-1}				0.755 (0.233)
LNTA _{ict-1}	0.023 (0.030)	-0.253 (-0.349)	-0.075 (-0.099)	-5.047 (-0.360)
DTA _{ict-1}	-0.149 (-0.088)	-0.320 (-0.191)	-0.347 (-0.204)	-8.643 (-0.210)
MB _{ict-1}	-0.019 (-0.419)	-0.034 (-0.711)	-0.026 (-0.626)	-0.151 (-0.293)
ROE _{ict-1}	2.055** (2.266)	2.303** (2.434)	1.772** (2.010)	-0.729 (-0.052)
GDPG _{ct-1}	0.505*** (4.410)	0.521*** (4.779)	0.528*** (4.844)	1.047 (0.531)
INF _{ct-1}	-0.030 (-0.504)	-0.052 (-0.890)	-0.027 (-0.464)	-0.285 (-0.246)
Firm FE.	Yes	Yes	Yes	Yes
Obs.	723	723	723	723
KP Stat.	50.300	59.732	48.551	0.049
KP P-val.	0.000	0.000	0.000	1.000
Hansen	1.245	2.368	1.121	0.672
Hansen P-val	0.742	0.500	0.772	0.880

The dependent variable is the weighted average cost of capital (CC). Independent variables are sustainability aspects which are environment (ENVI), social (SOCI), and governance (GOVE) scores. Control variables are natural log of total asset (LNTA), debt-to-asset (DTA), market-to-book ratio (MB), return-on-equity ratio (ROE), growth of gross domestic product (GDPG), and inflation rate (INF). Fixed effects are included at the firm level. T-statistics in parentheses. *, **, and *** denote significant at 10%, 5%, and 1%.

Discussion

Research findings prove that ESG performance negatively affects the cost of capital, thus supporting some previous studies (Breuer et al., 2018; Chen & Zhang, 2021; El Ghouli et al., 2011; Feng et al., 2015; Gracia & Siregar, 2021; Ng & Rezaee, 2015; Prasad et al., 2022; Yeh et al., 2020). Referring to the systematic-risk channel, environmentally friendly firms and efficient in running their business are less exposed to changes in energy prices (Giese et al., 2019). This can reduce systematic risk. Investors also tend to set a lower required rate of return and then a lower cost of capital.

From the point of view of stakeholder theory, sustainability activities that focus on the environment, social and governance issues can provide an excellent image to all stakeholders (community, workers, government, etc.) (Allen et al., 2007; Jones, 1995). The company's risk of lawsuits against its business activities is also low. Thus, investors' risk appetite decreases, and the cost of capital can be minimized (Rojo-Suárez & Alonso-Conde, 2023).

Conclusions

The cost of capital is an important aspect of managerial decision-making related to investment policies that originate from external funding. Corporate activities that prioritize environmental, social, and governance (ESG) considerations arguably have implications for reducing the cost of capital. However, the effectiveness of ESG in reducing the cost of capital decreases in countries with weak institutional quality, particularly in the Southeast Asian region. For this reason, this research aims to examine the impact of ESG on the cost of capital for companies in Southeast Asia.

The study validates that ESG has a negative impact on a firm's cost of capital. The environmental and social dimensions are potent factors in decreasing the cost of capital. Businesses that care about ESG increase their investor base, and the cost of capital can be diversified, thus minimizing it. Moreover, ESG can be a positive signal for stakeholders such as society, consumers, and the government. The implementation of ESG can also mitigate the risk of legal claims against a company's business activities that may affect public interests.

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