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ESG PERFORMANCE, OWNERSHIP STRUCTURE AND FIRM VALUE: EVIDENCE FROM ASEAN-5

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Abstract

This study first examines the relationship between Environment, Social and Governance (ESG) performance and firm value, and second, the effect of ownership structure on that relationship, employing a sample from five South-East Asian countries (ASEAN-5): Thailand, Indonesia, Malaysia, the Philippines, and Singapore. Based on data from the period of 2010 to 2020, the initial descriptive statistics report an increase in the average combined ESG scores of the ASEAN-5 countries and highlight that ESG has become more of a concern during the study period. Applying multiple regression with pooled panel data and controlling for year-, country- and industry-fixed effects, the results show that statistically ESG performance is positively related to firm value, particularly in Indonesia and Malaysia, when regressions are estimated at the country level individually. Concerning ownership structure, the study finds that this has a negative impact on the relationship between ESG performance and firm value, suggesting that a higher proportion of individual shareholders leads to lower ESG performance and a weaker firm value relationship, particularly in Indonesia. However, although different proxies of ownership structure could lead to different outcomes in the ASEAN-5 countries, the results confirm that the relationship between ESG and firm performance also applies to South-East Asian markets. Therefore, firms, as well as investors, should place more importance on ESG performance in order to achieve their goals. In addition, there is some evidence demonstrating that ownership structure effects the relationship between ESG performance and firm value.

Key words: ESG performance, ESG scores, Firm value, ASEAN-5, Ownership structure

INTRODUCTION

When making investment decisions, information is key. Recently, both financial and non-financial information has been widely used for such decisions. Normally, financial information relates to firms' financial activities, details of which can be found in their financial reports. Non-financial information, on the other hand, includes both qualitative and quantitative data, thus providing a wider area for financial analysis. This information includes environmental, social and governance (ESG), corporate social responsibility (CSR), employee well-being, innovation, and ethical practices. At present, non-financial information is gradually becoming popular due to the greater concern being shown about the environment, social well-being and sustainability. The concepts related to sustainable investment balance traditional

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investment with environmental, social and governance (ESG) concerns in order to maximise firm value in the long run.

Stakeholder theory argues that firm value is created not only from maximising shareholder wealth, but also from improving relationships between the firm and its stakeholders, including customers, suppliers, employees, and communities (Li et al., 2018). Therefore, when a firm's stakeholders are well treated, operating performance should improve, accompanied by a reduction in agency costs, which should result in an increase in firm value. Bell (2021) demonstrates that firms are becoming interested in creating long-term value for stakeholders, such as in terms of environmental activities, local communities and sustainability services. According to a survey by Nelson (2020), this is supported by the substantial increase in the percentage of investors accessing the structured view of ESG in 2020 (72%), up from 32% in 2018, for their investment decisions,

Ownership structure also has been widely discussed regarding its role in firm decisions and its subsequent effect on performance. Free float refers to the quantity of shares available to the public and provides information on ownership structure. Low free float represents concentrated firm ownership, leading to weaker corporate governance and stock illiquidity, and consequently lower firm performance (Bostanci & Kilic, 2010). However, some studies (e.g., Hartzell & Starks, 2003; Hossain et al., 2021) argue that concentrated ownership provides better firm monitoring and subsequently lower agency costs.

In previous research, ESG performance has been found to have both a positive relationship (e.g., Aert et al., 2008; Cormier & Magnan, 2007; Jeter, 2013; Bennani et al., 2018; Li et al., 2018) and a negative one (e.g., Richardson & Welker, 2001; Torre et al., 2020) with firm value. However, these studies focus mainly on developed markets, with evidence from emerging markets remaining lacking. Studies on such markets have been mostly conducted on specific countries, with cross-country studies remaining rare. Some characteristics of emerging markets (for instance, high volatility, with frequent changes in economic, political, social and policymaking aspects), mean firm value will relate differently to ESG performance than in developed markets, although the related findings are inconclusive. In addition, to the best of our knowledge, the role of ownership structure on this relationship has not been investigated with recent datasets.

This study therefore aims: (1) to examine the relationship between ESG performance and firm value; and (2) to evaluate the effect of ownership structure on the relationship between ESG performance and firms, in five emerging markets: Thailand, Indonesia, Malaysia, the Philippines and Singapore, known as ASEAN-5 (Association of Southeast Asian Nations-5). The findings are expected to contribute both academically and in terms of practitioners. With regard to academia, it is hoped that the findings will fill the gaps in the literature concerning the relationship between ESG performance and firm value; whether this can also be applied to Asian markets; and whether the relationship between ESG performance and firm value is determined by ownership structure. For practitioners, the results should benefit policymakers when developing guidelines to promote sustainable practices within firms. In addition, investors could utilise our findings in their decision making and investment strategies. The paper is organized as follows. The following section (Section 2) presents a review of the related literature, followed in Section 3 by discussion of the study methods. The results are presented in Section 4, with the conclusions in Section 5.

LITERATURE REVIEW

Stakeholder Theory

Stakeholder theory proposes that firm development is a result of all stakeholder

interests (Freeman, 1994). The theory breaks through the traditional view of shareholders' wealth maximisation, positing that firms must balance the interests of all stakeholders, encompassing any individuals or groups that can either affect or be affected by the firm. They can be both internal and external to the firm, such as customers, suppliers, staff, shareholders, business organisations, or social communities. Firms must understand and satisfy these parties as much as possible, as the inclusion of their interests in policy decision making is not only an ethical imperative, but also increases competitiveness. In addition, Freeman (1994) claims that building stakeholder satisfaction will reduce both direct and indirect costs, leading to the success of long-term firm objectives.

ESG Performance

The United Nations (UN) approved the Sustainable Development Goals (SDGs), comprising 17 goals acting as guidelines for developing world communities (Huber et al., 2018). They include the concept of Principles of Responsible Investment (PRI), which focuses on sustainable investment. ESG represents the three main concerns of sustainable investment; investors believe that ESG will strengthen the confidence of firm stakeholders, leading to reduced business risk and a gradual increase in long-term growth. Therefore, investors will consider these points in their decision-making. In parallel, if firms are more concerned with ESG, this will draw the attention of investors. As a result, many institutions (e.g., MSCI, Bloomberg, Reuters) publish ESG reports with graded scores. This has led to the adoption, in some of the ASEAN-5 nations, of the disclosure of ESG in annual reports and anything related to ESG activities. For instance, the Thai SEC (Securities Exchange Commission) has required all listed companies to report ESG information to stakeholders in their annual registration statements (Form 56-1 One Report) since 2022, with voluntary adoption beginning in 2020 (see more details via: https://www.sec.or.th/onereport).

Value of Firms

Firm value, also referred to as enterprise value, is the total market value of a firm assets, including both the value of operations and the value of non-operating assets. Investors can claim firm value, although lenders have priority to claim firm value over shareholders. Nevertheless, Lonkani (2018) and Ekundayo and Onefeli (2023), argue that the value of a firm is not only linked to shareholders' value, but to all stakeholders, in line with the concept of corporate sustainability. Tobin's Q, or the Q ratio, is one of the most commonly used measures to determine a firm's value. It assesses a firm's market value relative to its book value. When Tobin's Q is greater than 1, it indicates that the firm is overvalued. Conversely, when Tobin's Q is less than 1, the firm is undervalued. This method is supported by earlier studies, such as those of Lindenberg and Ross (1981) and Sudiyatno et al. (2012), in which Tobin's Q was applied to capture the value of firms. In addition, Chung and Pruitt (1994) suggested an alternative measurement for Tobin's Q, which is less conservative than that of Lindenberg and Ross (1981), and is known as a short-cut technique for calculating Tobin's Q. The results from these two determinations of Tobin's Q are very close. However, some studies criticise the application of Tobin's Q to measure firm value. Dybvig and Warachka (2015) indicated that there might be an impact of underinvestment on the measure, particularly in firms that have high levels of debt financing. In addition, Bartlett and Partnoy (2018) argued that measuring firm value by Tobin's Q may cause a biased estimation, as the calculation of Tobin's Q (by applying the book value of total assets) excludes intangible assets and firm-specific details. As a result of this, the higher the intangible assets, the higher Tobin's Q. Bartlett and Partnoy

(2018) also emphasised that this bias could arise in the study of corporate governance and firm value.

Firm value is influenced by both external and firm-specific factors. Gharaibeh and Qader (2017) showed that lagged year firm value, firm size, firm growth, and firm solvency, statistically influenced the firm value of companies listed on the Saudi Stock Exchange (TADAWUL). Sudiyatno et al. (2020) also found that financial leverage positively affects the value of Indonesian firms, meaning that funding policy must be developed by management teams.

Furthermore, Endri and Fathony (2020) studied firm value determinants in the financial sector in Indonesia. They argue that dividend policy and profitability have an effect on the value of firms, but that there is no evidence on the impact of size, solvency or growth. Nevertheless, some research papers indicate that firm value is significantly driven by firm size and capital structure (Nguyen et al., 2021), including sales growth and profitability (Li et al., 2018; Goh et al., 2022).

Relationship between ESG Performance and Firm Value

Several previous studies have been conducted to establish the effect of ESG activities on firms in many areas, such as firm value, stock returns, and operating performance. Most show an effect of ESG performance on firm value in developed markets; for example, Aerts et al. (2008), Jeter (2013), and Li et al. (2018). More specifically, Cormier and Magnan (2007) found a positive relationship between ESG performance and firm value. The same outcomes in an emerging market (South Korea), were demonstrated by Yoon et al. (2018). However, similar studies on ESG and firm value (such as Richardson & Welker, 2001 and Bennani et al., 2018), reveal a negative relationship in European and North American markets. Regarding the impact on stock returns, Bennani et al. (2018) and Orsagh et al. (2018) suggested that ESG performance plays an important role in explaining stock prices and returns in developed markets. For instance, a U-shape relationship has been reported between ESG performance and stock returns in EU markets (Bennani et al., 2018). However, a study by Torre et al. (2020) of stocks listed on EUROSTOXX50 during the period 2010 to 2018 shows no evidence of the effect of a relationship between stock returns and ESG performance. Lerskullawat and Prukumpai (2018) also compared samples of sustainable and non-sustainable stocks in Thailand in the period 2015-2016, finding no differences in the operating performance of the two samples.

Ownership Structure

Previous studies (e.g., Demsetz & Villalonga, 2001; Ducassy & Montandrau, 2015; Paniagua et al., 2018; Saona & San Martin, 2018; Kao et al., 2019) have examined the impact of ownership structure on firm value, an issue of interest in corporate governance. Ownership structure can be defined by the distribution of shares and is distinguished by inside and outside ownership, as well as by the level of concentration of such ownership (reflecting negatively on free float). There are two categories of ownership structure. First, in dispersed ownership there are a high number of shareholders, but each only holds a small proportion of stocks. Berle and Means (1933, cited by Mizruchi, 2004) conclude that there is a separation between ownership and management in this type of structure, leading to a beneficial conflict between shareholders (as the owners) and management for the control of firms. Since the shareholders only own a small proportion of stock, difficulties arise in voting to invigilate related to the monitoring of management teams.

The second category is the concentrated ownership structure, in which there are a small number of shareholders, but each holds a large proportion of stocks. This type of ownership structure also results in a beneficial conflict between individual shareholders, as the majority prefer to consider their long-term benefits (Bebchuk & Hamdani, 2009). Yoon et al. (2018) confirm that corporate governance (which is a consequence of the beneficial conflict among shareholders) relates to ownership structure. Since concentrated ownership involves the holding of large proportions of shares, the owners monitor firms actively, helping to reduce agency cost. As a consequence, a positive relationship between firm value and ownership concentration can be seen (Kao et al., 2019). In contrast, higher ownership concentration could possibly lead to less efficient monitoring. This could result in substantial lower firm value, and a higher risk exposure, implying a negative relationship between ownership concentration and firm value (Ducassy & Montandrau, 2015; Paniagua et al., 2018).

The literature review shows that the results of studies are inconclusive and remain focused on developed markets. For instance, positive (Cormier & Magnan, 2007) and negative (Richardson & Welker, 2001; Bennani et al., 2018) relationships between ESG performance and firm value have been demonstrated. In addition, an impact of ESG performance on stock returns has been reported in Li et al. (2018), Khan (2019), and Orsagh et al. (2018), whereas no such impact was identified by Torre et al., (2020). Moreover, differences in ownership structure could influence policymaking, including corporate governance and ESG performance. As a result, to some extent ownership structure is a key factor in driving the relationship between ESG performance and firm value. Consequently, the following hypotheses are proposed:

H_1: Environmental, social, and governance (ESG) performance has an effect on firm value.

H_2: Ownership structure has an effect on the extent of the relationship between ESG performance and firm value.

DATA AND RESEARCH METHODS

Data Collection

Since there have been few studies of emerging markets, and because Asian businesses appear to be more concerned with financial operating performance than social responsibility, this study considers companies listed in five different ASEAN markets, Thailand, Indonesia, Malaysia, the Philippines, and Singapore. These are known as ASEAN-5 markets (as defined by the IMF) and are the leading markets among the ASEAN countries. Many studies have put forward reasons why ASEAN is an interesting area to focus on. For example, there has been rapid growth in the economies with low correlations between the ASEAN, leading to high returns and lower risk for investors (Lim, 2009). In addition, investors can easily diversify their investments across industries (Setyawan, 2020). ASEAN (2021) has also shown a significant increase in the region's share of global foreign direct investment (FDI), from 11.9 billion USD in 2015 to 13.8 billion USD in 2020. As a result, ASEAN is claimed to be the largest recipient of FDI in the developing world and has become an interesting region in which to invest (Lim Jock-Hoi, 2021, cited by ASEAN, 2021).

For this study, annual data were taken from LSEG DataStream covering the period 2010 to 2020, including listed firms with ESG information. Financial firms were excluded from the sample due to differences in their asset structures. An overview of the data is shown in Table 1, which indicates that Malaysia has the highest number of firms with ESG data each year, followed by Singapore and Thailand. The main reason for choosing the study period from 2010 to 2020 is the substantial increase in the number of firms with ESG scores in the ASEAN-5

countries over this decade, rising from 96 firms in 2010 to 227 firms in 2019 (see Table 1). This reflects a growing and sustained interest in ESG performance during this period. Furthermore, 11-year data is sufficient to cover all economic cycles and, during this period, the economy appeared to be generally stable. However, there was a sharp fall in the number of ESG firms in the ASEAN-5 countries in 2020, possibly caused by the Covid-19 pandemic, which resulted in most activities coming to a halt.

Table 1 Number of ESG Firms in ASEAN-5 Countries Between 2010 and 2020

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total-5	96	106	111	121	131	138	143	151	160	227	83
THA	12	13	16	19	23	25	27	29	33	80	20
INDO	17	17	18	22	24	27	28	30	31	33	5
MALAY	28	32	33	34	37	39	41	45	46	49	25
PP	11	15	15	17	18	18	18	18	19	18	5
SIN	28	29	29	29	29	29	29	29	31	47	28

Note. The table shows the number of listed firms in the ASEAN-5 countries, Thailand (THA), Indonesia (INDO), Malaysia (MALAY), the Philippines (PP) and Singapore (SIN), which have ESG scores during the period 2010 to 2020. Total-5 refers to the total from all ASEAN-5 countries. Data were collected from LSEG DataStream.

With regards to ESG scores, there was a gradual increase in the average ESG combined scores in the five ASEAN markets – from 33.08 in 2010 to 50.68 in 2020 (see Table 2). This could signal growing concern about sustainability activities (both CSR-corporate social responsibility and ESG) in companies and is consistent with the report by Bell (2021).

Table 2 Average ESG Combined Scores Between 2010 and 2020 Among the ASEAN-5 Countries

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total-5	33.08	34.85	37.63	37.92	39.59	42.64	44.43	47.03	48.88	48.59	50.68
THA	39.23	44.78	46.86	46.97	49.21	53.01	54.07	55.58	58.72	47.60	49.86
INDO	41.44	42.33	44.63	41.78	41.25	42.72	41.89	44.76	43.90	45.59	62.68
MALAY	29.79	32.05	36.05	36.13	36.58	40.46	45.25	46.94	49.92	52.18	51.30
PP	34.62	31.63	33.94	32.27	34.80	37.58	39.69	42.17	42.62	51.35	52.57
SIN	28.04	30.77	31.92	34.45	37.40	39.71	39.71	43.98	45.67	47.56	48.23

Note. The data show average ESG combined scores during the study period of 2010 to 2020 for non-financial firms listed in the ASEAN-5 countries, Thailand (THA), Indonesia (INDO), Malaysia (MALAY), the Philippines (PP) and Singapore (SIN). Total-5 refers to the total from all ASEAN-5 countries. Data were taken from LSEG DataStream.

Research Methods

Multiple regressions were applied with an unbalanced pooled panel data analysis. With the proxy for firm value, Tobin's Q was used following the suggestion of Chung and Pruitt (1994), as this measurement is less complicated than the original one proposed by Lindenberg and Ross (1981), and also the outcomes appear to be close to those of the original. In addition, the use of Tobin's Q avoids findings related to marginal cost and rate of return, and it is a good indicator of companies which are undervalued or overvalued (Gordon, 2021). However, some studies (e.g., Wolfe, 2003; Gordon, 2021) point out that Tobin's Q is limited in the area of firms' economic viability, such as bankruptcy predictions related to Altman Z-Scores.

Moreover, although there should be bias estimation when using Tobin's Q as an indicator of firm value for research in corporate governance (Bartlett & Partnoy, 2018), this study provides no direct estimation of corporate governance. This should not be the case; consequently, to some extent Tobin's Q would be the best match to measure firm value in this study. The Tobin's Q of Chung and Pruitt (1994) is shown in Equation 1 below:

$$\text{CP} - \text{Tobin's Q} = \frac{\text{MVE+PS+DEBT}}{\text{TA}} \quad (1)$$

where, MVE = market value of equity (price of stock times number of shares)
PS = redemption value of preferred stocks
DEBT = net of firm's short-term debt, plus book value of long-term debt
TA = book value of total assets

To estimate the first hypothesis, Equation 2 employs multiple regression to capture the effect of ESG performance on firm value. The control variables apart from ESG have been suggested in several previous studies, such as Li et al. (2018), Saona and San Martin (2018), Almahadin and Oroud (2019), Endri and Fathony (2020), and Nguyen et al. (2021). There is evidence that firm value will be driven by firm characteristics. Aggarwal et al. (2009) indicated many proxies for firm characteristics; for instance, firm size, sales growth (measured by sale revenue), level of cash, PPE (property, plant and equipment), earnings before interest, and taxes. In line with the findings of Li et al. (2018) on the effect of these firm characteristics on firm value, sales growth, and level of cash were selected as firm characteristics for this study, and as control variables, due to their statistical significance. Moreover, firm size (measured by the natural logarithm of total firm assets), the debt-to-equity ratio (as a proxy for firms' capital structure), and return on assets (ROA, as a measurement of firm profitability) were included in the regression, on the basis of findings from earlier research (e.g., Li et al., 2018; Endri & Fathony, 2020; Nguyen et al., 2021), which report the effects of these control variables on firm value. The seasonal effect, industries, and countries, were also added to the regression to control the fixed effect. Equation 2 is shown below:

$$\text{Tobin's Q}_{it} = \beta_0 + \beta_1 \text{ESG}_{it} + \beta_2 \text{GROWTH}_{it} + \beta_3 \text{CASH}_{it} + \beta_4 \text{LNTA}_{it} + \beta_5 \text{DE}_{it} + \beta_6 \text{ROA}_{it} + \text{YearFixedEffect}_t + \text{IndustryFixedEffect}_t + \text{CountryFixedEffect}_t + \varepsilon_{it} \quad (2)$$

where Tobin's Q_{it} = Tobin's Q of firm i at time t
ESG_{it} = ESG performance of firm i at time t
$GROWTH_{it}$ = ratio of sales revenue of firm i at time t to total sales revenue of firm i at time t minus one
$CASH_{it}$ = ratio of cash to total assets of firm i at time t
$LNTA_{it}$ = natural logarithm of total assets of firm i at time t
DE_{it} = debt-to-equity ratio of firm i at time t
ROA_{it} = return on assets of firm i at time t

In the second hypothesis, which is related to ownership structure, the free float of shareholders would be the best fit for the measurement (Claessens et al., 2002; Kao et al., 2019). Subsequently, the interaction terms of ESG and free float are brought into the estimation to examine the effect of ownership structure on the relationship between ESG and firm value. The other control variables remain the same as in Equation 2. The free float of shareholders was obtained from DataStream and is defined as the percentage of total shares issued available to ordinary investors. Therefore, the second hypothesis is estimated with the regression as shown in Equation 3.

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 FreeFloat_{it} + \beta_3 (ESG_{it})(FreeFloat_{it}) + \beta_4 GROWTH_{it} + \beta_5 CASH_{it} + \beta_6 LNTA_{it} + \beta_7 DE_{it} + \beta_8 ROA_{it} + YearFixedEffect_t + IndustryFixedEffect_t + CountryFixedEffect_t + \varepsilon_{it} \quad (3)$$

where Tobin's Q_{it} = Tobin's Q of firm i at time t
ESG_{it} = ESG performance of firm i at time t
$FreeFloat_{it}$ = free float of individual shareholders of firm i at time t
$GROWTH_{it}$ = ratio of sales revenue of firm i at time t to total sales revenue of firm i at time t minus one
$CASH_{it}$ = ratio of cash to total assets of firm i at time t
$LNTA_{it}$ = natural logarithm of total assets of firm i at time t
DE_{it} = debt-to-equity ratio of firm i at time t
ROA_{it} = return on assets of firm i at time t

The measurements of each variable are summarised in Table 3, with Tobin's Q defined in line with Equation 1, following Chung and Pruitt (1994).

Table 3 Variable Measurements

Variable	Definition	Evaluation Method
ESG	An overall company score based on the reported information in the environmental, social and corporate governance pillars (ESG score), with an ESG controversies overlay.	Directly obtained from LSEG DataStream
GROWTH	Ratio of sales growth	$\left(\frac{\text{Current Year's Net Sales or Revenues}}{\text{Last Year's Total Net Sales or Revenues}} - 1\right)$
CASH	Ratio of cash to total assets	$\frac{\text{Cash}}{\text{Total Asset}}$
LNTA	Natural logarithm of total assets	LN (Total Asset)
DE	Debt-to equity ratio	$\left(\frac{\text{Long Term Debt + Short Term Debt and Current Portion of Long Term Debt}}{\text{Common Equity}}\right)$
ROA	Return on assets	$\frac{\text{Net Income} + [(\text{Interest Expense on Debt} - \text{Interest Capitalised}) \times (1 - \text{Tax})]}{\text{Average of Last Year's and Current Year's Total Assets}}$
FreeFloat	The total amount of share capital freely available to ordinary investors, expressed as a percentage of the total number of shares.	Directly obtained from LSEG DataStream

Note. The table shows a summary of the variable definitions and how they were measured. All the definitions were taken from LSEG DataStream.

RESULTS AND DISCUSSION

Table 4 presents the descriptive statistics of the variables employed in the regressions from Equations 2 and 3. The data were calculated by grouping all the countries together. The debt-to-equity ratio reports negative values in the descriptive statistics as a result of the data from Indonesia and Malaysia. This implies that to some extent those firms in these two countries could face high risk due to a high amount of debt and other liabilities, leading to financial distress. In addition to the descriptive statistics, the correlation matrix was generated (shown in Table 5) prior to the estimation of Equations 2 and 3, in order to avoid multicollinearity. The outcomes reveal that the regressions are free from multicollinearity as there are no highly correlated variables. More than 50% of correlated variables are stated to show multicollinearity, according to Brooks (2008).

Table 4 Descriptive Statistics Covering All Variables

Variable	Mean	Max	Min	Standard Deviation
Tobin's Q	2.0414	20.7074	0.2438	2.2510
ESG	38.9249	89.9600	1.2000	22.5315
FreeFloat	44.0653	100.0000	0.0000	19.3970
LNTA	18.3864	26.5730	12.3367	3.2168
CASH	0.0734	0.7687	0.0038	0.0876
DE	0.9606	29.3142	-8.8333	1.7458
GROWTH	0.1802	66.9363	-0.8853	2.3229
ROA	0.0869	0.7532	-0.3906	0.0899

Note. The table shows the descriptive statistics of all the variables employed in this study covering the period 2010 to 2020. Data were taken from all ASEAN-5 countries. Tobin's Q refers to the calculation given in Equation 1, following Chung and Pruitt (1994). ESG refers to the ESG scores, while FreeFloat is that of individual investors. LNTA is defined as the natural logarithm of total assets; CASH refers to the ratio of cash to total assets; DE is the debt-to-equity ratio; GROWTH is defined as the ratio of the sales revenue of firms in the current year to total sales revenue in the previous year; and ROA stands for return on assets. All data were collected from LSEG DataStream.

Table 5 Correlation Matrix Covering All Variables

	ESG	FreeFloat	LNTA	CASH	DE	GROWTH	ROA
ESG	1						
FreeFloat	-0.0696	1					
LNTA	0.0631	-0.1314	1				
CASH	-0.0856	0.1483	-0.1395	1			
DE	0.0257	-0.0076	0.0056	-0.1138	1		
GROWTH	-0.0456	0.0161	0.0320	0.0600	-0.0999	1	
ROA	0.0386	-0.0854	0.0136	0.0808	-0.0604	-0.0038	1

Note. The table indicates the correlation matrix among the variables in ASEAN-5 between 2010 and 2020. ESG refers to the ESG scores, while FreeFloat is that of individual investors. LNTA is defined as the natural logarithm of total assets; CASH refers to the ratio of cash to total assets; DE is the debt-to-equity ratio; GROWTH is defined as the ratio of sales revenue of firms in the current year to total sales revenue in the previous year; and ROA stands for return on assets. All data were collected from LSEG DataStream.

Subsequently, multiple regression was applied to test whether ESG affected firm value, with reference to our first hypothesis. In Table 6, the estimations are reported in six panels by considering only ESG (in panel A) to evaluate the effect on firm value. The control variables were then gradually added into the regression (in panels B to F), together with the dummy variables for countries, industries, and years. The results shown in Table 6 demonstrate a statistically positive effect of ESG on firm value (see Table 6, panels A to F). This indicates that firm value could rise when the ESG activities of firms increase. The findings are also consistent with several previous studies; for example, Li et al. (2018), Yoon et al. (2018) and Gerard (2019). When the control variables were included in the regression, firm size, capital structure, profitability and sales growth were among the control variables which showed a statistical impact on firm value in the ASEAN-5 countries. Surprisingly, there was a negatively significant relationship between sales growth and firm value. Although sales growth is our control variable, it is an unusual outcome, as in general the higher the growth, the higher the

Table 6 Regression Outcomes for Overall ASEAN-5 ESG Performance and Firm Value

	Panel A	Panel B	Panel C	Panel D	Panel E	Panel F
C	1.6400 ***	0.4450	4.6900 ***	-0.3600	0.8500 **	4.2900 ***
	(0.1200)	(0.318)	(0.7130)	(0.3410)	(0.3370)	(0.6820)
ESG	0.0103 ***	0.0075 ***	0.0085 ***	0.0082 ***	0.0044 **	0.0063 ***
	(0.0035)	(0.0020)	(0.0021)	(0.0021)	(0.0019)	(0.0021)
GROWTH		-0.0002 **	-0.0002 **	-0.0002 **	-0.0002 ***	-0.0002 ***
		(0.0001)	(0.0001)	(0.0001)	(0.0008)	(0.0008)
CASH		-0.1640	-0.6970	-0.3610	-0.5080	-1.1000
		(0.8900)	(0.8640)	(0.9060)	(0.9170)	(0.9050)
LNTA		-0.0199	-0.2460 ***	-0.0167	-0.0236 *	-0.2350***
		(0.0146)	(0.035)	(0.0153)	(0.0143)	(0.0359)
DE		0.0144	0.0277 *	0.0276 **	0.0153	0.0367 ***
		(0.0156)	(0.0152)	(0.014)	(0.0157)	(0.0129)
ROA		0.1910 ***	0.1750 ***	0.1920 ***	0.1990 ***	0.1840 ***
		(0.012)	(0.0125)	(0.0122)	(0.0126)	(0.0135)
Dummy Country			Included			Included
Dummy Industry				Included		Included
Dummy Year					Included	Included
R^2	0.0105	0.6040	0.6270	0.6080	0.6240	0.6480

* significant at 10%, ** significant at 5%, *** significant at 1%

Note. The table shows the results of the estimation of the relationship between ESG performance and firm value in the ASEAN-5. The regression was examined as: $\text{Tobin}'\text{s}Q_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 GROWTH_{it} + \beta_3 CASH_{it} + \beta_4 LNTA_{it} + \beta_5 DE_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$. C is the intercept of the regression. Tobin's Q was calculated following Chung and Pruitt (1994): $\text{Tobin}'\text{s Q} = \frac{\text{MVE+PS+DEBT}}{\text{TA}}$, where MVE = market value of equity (price of stock times number of shares); PS = redemption value of preferred stocks; DEBT = combination of debt turnover and book value of long-term debt; and TA = book value of total assets. ESG represents the ESG performance of firms. GROWTH is the ratio of sales revenue to the previous year's total sales revenue, while CASH is the ratio of cash to total assets. LNTA is the natural logarithm of total assets; DE refers to the debt-to-equity ratio; and ROA is return on assets. Panel A reports the results when only ESG is included in the regression, while Panel B shows the results when ESG and other control variables are included in the estimation, regardless of the dummy variables. Panels C, D and E indicate the results when three dummy variables (country, industry, and year) are estimated separately and respectively. Panel F shows the results when all the variables are included in the regression. The numbers in parentheses are the standard errors.

firm value. However, interesting studies by Endri and Fathony (2020) and Gao et al. (2023) found no relationship between growth and firm value in Indonesia. In addition, Gao et al. (2023) claim that there is no guarantee of high (sales) growth in companies which have good operating performance and high value in Indonesia. Consequently, since the ASEAN-5 countries include Indonesia, it could be the case that the outcomes of sales growth are unusual in our results with a statistically significant negative relationship (see Table 6 – panels B to F). One possible reason for this, which has been proposed in the Indonesian studies mentioned previously, is that stock trading in the country is based on Islamic principles.

When each country was estimated separately with regard to the first hypothesis, ESG performance related statistically and positively to firm value only in Indonesia and Malaysia, whereas the other three markets demonstrated no impact (see Table 7 – panels A and B). This is consistent with Sadiq et al. (2020), particularly in the case of Malaysia. The impact of control variables on firm value varies across different countries. Sales growth negatively impacts firm

Table 7 Regression Outcomes for ESG Performance and Firm Value for Individual ASEAN-5 Countries

	Thailand	Indonesia	Malaysia	The Philippines	Singapore
C	4.2200***	-0.2750	8.6500 ***	7.5200 ***	4.0800 ***
	(1.4400)	(4.7100)	(1.5800)	(1.6600)	(0.4970)
ESG	-0.0041	0.0125*	0.0136***	-0.0022	0.0021
	(0.0031)	(0.0066)	(0.0045)	(0.0020)	(0.0014)
GROWTH	-0.0043	-0.0002 *	-0.0036	-0.0053	0.0007
	(0.00363)	(0.0001)	(0.00252)	(0.00324)	(0.0011)
CASH	-1.3100	-6.7700 ***	-1.3300 ***	1.5800	1.0700
	(1.2500)	(2.1500)	(0.4620)	(0.9770)	(0.7620)
LNTA	-0.1870 **	-0.0039	-0.5200 ***	-0.3570 ***	-0.2380 ***
	(0.0868)	(0.1850)	(0.0874)	(0.0815)	(0.029)
DE	0.0046	0.0474	0.1010 *	0.0362	0.0350 ***
	(0.0539)	(0.0488)	(0.0553)	(0.0277)	(0.0105)
ROA	0.1470 ***	0.2730 ***	0.1710 ***	0.0920 ***	0.0234 **
	(0.0208)	(0.0361)	(0.0091)	(0.0222)	(0.0105)
Dummy Country	-	-	-	-	-
Dummy Industry	Included	Included	Included	Included	Included
Dummy Year	Included	Included	Included	Included	Included
R^2	0.5910	0.6970	0.8190	0.5190	0.5340

* significant at 10%, ** significant at 5%, *** significant at 1%

Note. The table shows the results of the estimation of the relationship between ESG performance and firm value in individual ASEAN-5 countries, namely Thailand, Indonesia, Malaysia, Philippines and Singapore. The regression was examined as: $\text{Tobin's Q}_{it} = \beta_0 + \beta_1 \text{ESG}_{it} + \beta_2 \text{GROWTH}_{it} + \beta_3 \text{CASH}_{it} + \beta_4 \text{LNTA}_{it} + \beta_5 \text{DE}_{it} + \beta_6 \text{ROA}_{it} + \varepsilon_{it}$. C is the intercept of the regression. Tobin's Q was calculated following Chung and Pruitt (1994): $\text{Tobin's Q} = \frac{\text{MVE+PS+DEBT}}{\text{TA}}$, where MVE = market value of equity (price of stock times number of shares); PS = redemption value of preferred stocks; DEBT = the combination of debt turnover and book value of long-term debt; and TA = book value of total assets. ESG represents the ESG performance of firms, while GROWTH is the ratio of sales revenue to the previous year's total sales revenue, and CASH is the ratio of cash to total assets. LNTA is the natural logarithm of total assets. DE refers to the debt-to-equity ratio and ROA is return on assets. Only two dummy variables were included in the estimation: industry and year. The numbers in parentheses are the standard errors.

value statistically in Indonesia which supports the findings of Endri and Fathony (2020) and Gao et al. (2023). Cash also negatively impacts firm value statistically in both Indonesia and Malaysia. Firm size (measured by the natural logarithm of total assets) negatively affects firm performance in all countries, except Indonesia. Financial risk (measured by the debt-to-equity ratio) positively impacts firm value in Malaysia and Singapore. Profitability (measured by ROA) positively impacts firm value in all ASEAN-5 countries. These results suggest that ESG affects firm value at an aggregate level. However, the impact can differ at the country level due to specific market characteristics in each ASEAN-5 country. Laws and regulations, as well as beliefs and values, vary from country to country. This is consistent with Ungphakorn (2024), who suggested that legal systems and income inequality influence ESG performance. As a result, ESG performance plays an interesting role in firm value among the ASEAN-5 countries overall, confirming that our first hypothesis is confirmed.

Moving to the estimation of the second hypothesis, ownership structure was introduced into the regression by using the interaction terms of ESG and free float. Since our findings from the first hypothesis indicate that ESG performance affects firm value, we expect there to be an impact of ownership structure on the relationship. The results shown in Table 8 are divided into six panels (similar to Table 6 in relation to the first hypothesis) by including ESG and ownership structure (proxied by free float and the interaction term of ESG and free float) in panel A to evaluate the effect of ownership structure on the relationship between ESG performance and firm value. In the following panels (B to F), control and dummy variables for country, industry and year, were gradually added into the regression. ESG and ownership structure demonstrate a statistically and positively significant relationship with firm value in the ASEAN-5 countries overall, without other control and dummy variables (see Table 8 – panel A). This is consistent with the works of Saona and San Martin (2018), Eliwa et al. (2021) and Al Amosh and Khatib (2022), which reported that ownership, including company stakeholders, relate to ESG performance.

Adding in the control and dummy variables, ESG remains a key driver of firm value, as demonstrated by the statistical significance in all the panels (see Table 8 – panels B to F). Although ownership structure itself (proxied by free float) indicates no influence on firm value, ownership structure (captured by the interaction term of free float and ESG) shows a significant impact on the level of the relationship between ESG and firm value. This means the second hypothesis cannot be rejected. In addition, the interaction terms of free float and ESG relate statistically and negatively in every panel in Table 8. This implies that a weaker relationship between ESG performance and firm value is a result of free float (as a proxy for ownership structure). As a consequence, the effect of ESG performance on firm value in firms with concentrated ownership structure is higher than that found in firms with a dispersed ownership structure (high in free float). Hence, ownership structure is demonstrated to be the main player in driving the relationship between ESG performance and firm value. For instance, the higher the performance of ESG, the higher the firm value, so firms with concentrated ownership structure should be focused on. This is consistent with the work of Hossain et al. (2021). Moreover, firm size, profitability and sales growth are among the control variables which have an impact on firm value. The same issue of the negative relationship between sales growth and firm value still exists. Therefore, the findings of Endri and Fathony (2020) and Goh et al. (2022) in Indonesia could again support this issue.

When each country was estimated individually with regard to the second hypothesis, ESG performance was shown to impact firm value only in Indonesia, whereas ownership structure in Indonesia also affects the relationship between firm value and ESG performance. In Singapore, although there is no evidence that ESG relates to firm value, ownership structure in the country is statistically significant to firm value and affects the level of the relationship between ESG and firm value (see Table 9). This is in line with the findings of Saona and San

Table 8 Regression Outcomes for ESG Performance, Ownership Structure and Firm Value for ASEAN-5

	Panel A	Panel B	Panel C	Panel D	Panel E	Panel F
C	0.6630	0.1190	4.8300 ***	-0.3860	0.4770	4.4600 ***
	(0.4320)	(0.4940)	(0.8970)	(0.5400)	(0.4570)	(0.8760)
ESG	0.0493 ***	0.0248 ***	0.0216 ***	0.0268 ***	0.0222 ***	0.0209 ***
	(0.0125)	(0.0081)	(0.0080)	(0.0081)	(0.0078)	(0.0078)
FF	0.0213 ***	0.0096	0.0050	0.0089	0.0101	0.0051
	(0.0082)	(0.0066)	(0.0064)	(0.0066)	(0.0066)	(0.0064)
FF x ESG	-0.0009 ***	-0.0004 **	-0.0003 **	-0.0004 ***	-0.0004 ***	-0.0003 **
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
GROWTH		-0.0002 **	-0.0002 **	-0.0002 **	-0.0002 ***	-0.0002 ***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
CASH		-0.1270	-0.5980	-0.2670	-0.4570	-0.9660
		(0.8870)	(0.8670)	(0.8980)	(0.9110)	(0.9010)
LNTA		-0.0229	-0.2570 ***	-0.0184	-0.0260 *	-0.2460 ***
		(0.0144)	(0.0374)	(0.0149)	(0.0142)	(0.0386)
DE		0.0134	0.0263 *	0.0321**	0.0146	0.0400 ***
		(0.0165)	(0.0159)	(0.0147)	(0.0166)	(0.0133)
ROA		0.1870 ***	0.1710 ***	0.1880 ***	0.1950 ***	0.1790 ***
		(0.0121)	(0.0128)	(0.0122)	(0.0127)	(0.0137)
Dummy Country			Included			Included
Dummy Industry				Included		Included
Dummy Year					Included	Included
R^2	0.0523	0.6030	0.6250	0.6090	0.6220	0.6460

* significant at 10%, ** significant at 5%, *** significant at 1%

Note. The table shows the results of the estimation of ownership structure and the level of the relationship between ESG performance and firm value in the ASEAN-5 overall. The regression was examined as: $\text{Tobin's Q}_{it} = \beta_0 + \beta_1 \text{ESG}_{it} + \beta_2 \text{FreeFloat}_{it} + \beta_3 (\text{ESG}_{it})(\text{FreeFloat}_{it}) + \beta_4 \text{GROWTH}_{it} + \beta_5 \text{CASH}_{it} + \beta_6 \text{LNTA}_{it} + \beta_7 \text{DE}_{it} + \beta_8 \text{ROA}_{it} + \varepsilon_{it}$. C is the intercept of the regression. Tobin's Q was calculated following Chung and Pruitt (1994): $\text{Tobin's Q} = \frac{\text{MVE+PS+DEBT}}{\text{TA}}$, where

MVE = market value of equity (price of stock times number of shares); PS = redemption value of preferred stocks; DEBT = combination of debt turnover and book value of long-term debt; and TA = book value of total assets. ESG represents the ESG performance of firms. FF is the free float of individual firm shareholders, while GROWTH is the ratio of sales revenue to the previous year's total sales revenue, and CASH is the ratio of cash to total assets. LNTA is the natural logarithm of total assets. DE refers to the debt-to-equity ratio and ROA is return on assets. **Panel A** reports the results when only ESG, ownership structure (measured by free float), and the interaction term of ESG and free float are included in the regression. **Panel B** shows the results when ESG, ownership structure, and other control variables are included in the estimation, ignoring the dummy variables. **Panels C, D and E** indicate the results when the three dummy variables (country, industry, and year) were estimated separately and respectively, while **Panel F** shows the results when all the variables were included in the regression. The numbers in parentheses are the standard errors.

Martin (2018) and Al Amosh and Khatib (2022). Furthermore, there is no effect of ownership structure on the level of the relationship between ESG and firm value in Malaysia, the Philippines, or Thailand, even when considering only ownership structure itself. These results support the study of Møller-Pettersen (2020), who pointed out that the ESG score (as a proxy for CSR policies) depends on the power of owners in relation to the shareholders in European firms. Nevertheless, the relationship between sales growth and firm value in Indonesia still has a statistically negative impact on firm value. This is again consistent with the works of Endri and Fathony (2020) and Goh et al. (2022).

Table 9 Regression Outcomes for ESG Performance, Ownership Structure and Firm Value for Individual ASEAN-5 Countries

	Thailand	Indonesia	Malaysia	The Philippines	Singapore
C	5.9800 ***	-4.6600	8.4700 ***	7.2900 ***	5.2300 ***
	(1.8500)	(4.8300)	(1.7000)	(1.7000)	(0.6140)
ESG	-0.0173	0.0638 ***	0.0201	0.0048	-0.0045
	(0.0113)	(0.0225)	(0.0135)	(0.0065)	(0.0037)
FF	-0.0160	0.0340	-0.0038	0.0065	-0.0121 ***
	(0.0110)	(0.0211)	(0.0089)	(0.0058)	(0.0040)
FF x ESG	0.0003	-0.0015 ***	-0.0002	-0.0002	0.0002 **
	(0.0002)	(0.0006)	(0.0003)	(0.0001)	(0.0001)
GROWTH	-0.0037	-0.0003 **	-0.0030	-0.0054	0.0007
	(0.0028)	(0.0001)	(0.0025)	(0.0034)	(0.0011)
CASH	-1.2800	-4.6700 **	-1.0600 **	1.5500	1.2800 *
	(1.1000)	(2.1100)	(0.4260)	(0.9620)	(0.7490)
LNTA	-0.2300 **	0.1380	-0.5000 ***	-0.3620 ***	-0.2610 ***
	(0.0920)	(0.1890)	(0.0902)	(0.0801)	(0.0324)
DE	0.0206	0.0284	0.1300 **	0.0477	0.0274 ***
	(0.0525)	(0.0708)	(0.0583)	(0.0312)	(0.0100)
ROA	0.1200 ***	0.2590 ***	0.1720 ***	0.0928 ***	0.0186 *
	(0.0224)	(0.0342)	(0.0091)	(0.0228)	(0.0108)
Dummy Country	-	-	-	-	-
Dummy Industry	Included	Included	Included	Included	Included
Dummy Year	Included	Included	Included	Included	Included
R^2	0.4690	0.7220	0.8240	0.5220	0.5490

* significant at 10%, ** significant at 5%, *** significant at 1%

Note. The table shows the results of the estimation of the relationship between ESG performance, ownership structure and firm value in individual ASEAN-5 countries, namely Thailand, Indonesia, Malaysia, the Philippines, and Singapore. The regression was examined as: $\text{Tobin's Q}_{it} = \beta_0 + \beta_1 \text{ESG}_{it} + \beta_2 \text{FreeFloat}_{it} + \beta_3 (\text{ESG}_{it})(\text{FreeFloat}_{it}) + \beta_4 \text{GROWTH}_{it} + \beta_5 \text{CASH}_{it} + \beta_6 \text{LNTA}_{it} + \beta_7 \text{DE}_{it} + \beta_8 \text{ROA}_{it} + \varepsilon_{it}$. C is the intercept of the regression. Tobin's Q was calculated following Chung and Pruitt (1994): $\text{Tobin's Q} = \frac{\text{MVE+PS+DEBT}}{\text{TA}}$, where MVE = market value of equity (price of stock times number of shares); PS = redemption value of preferred stocks; DEBT = the combination of debt turnover and book value of long-term debt; and TA = book value of total assets. ESG represents the ESG performance of firms. FF is the free float of individual firm shareholders; GROWTH is the ratio of sales revenue to the previous year's total sales revenue; and CASH is the ratio of cash to total assets. LNTA is the natural logarithm of total assets; DE refers to the debt-to-equity ratio; and ROA is return on assets. The numbers in parentheses are the standard errors.

CONCLUSION

The extent of sustainable activities in most firms is becoming a main concern, including environmental, social, and governance (ESG) performance. This research has examined the relationship between ESG performance and firm value, together with the effect of ownership structure, in relation to the ASEAN-5 countries, Thailand, Indonesia, Malaysia, the Philippines, and Singapore. Data were obtained from the period 2010 to 2020 for the ASEAN-5. The results show that ESG performance plays a significant role in firm value in all countries as a whole, whereas its effects are reported individually only in Indonesia and Malaysia. The findings are mostly consistent with previous studies. In addition, the regression appears to fit a high level of R-squared in the sample. Ownership structure must also be considered, as it impacts the relationship between ESG performance and firm value. Firms with concentrated ownership structure would be highly preferred by investors seeking to invest in high value firms within the ASEAN-5 countries. However, estimations for individual countries in ASEAN-5 indicate a preference for different investment decisions, particularly with regard to Indonesia. Nonetheless, since our work considered ending the study period in 2020, in which the COVID-19 pandemic began, it would be beneficial for future study to cover the impact of this pandemic. A comparison work could be one of the possibilities: e.g. estimation of the impact to firm value prior to the pandemic compared with after the year 2023 (according to the announcement of WHO: The World Health Organisation on 5 May 2023), when COVID-19 became classified as an endemic disease.

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