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Article

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Does ESG really matter to the bank's stability in ASEAN countries?

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ABSTRACT

On the rising interest in the sustainability and stability of commercial banks in ASEAN, we set out to examine the impacts of Environmental, Social, and Governance (ESG) activities on bank stability in this region. We build models based on signal theory, stakeholder theory, and overinvestment theory. Upon data collected from banks in the ASEAN from 2015 to 2022, we perform various econometric analyses, including system GMM (Generalized Method of Moments), to demonstrate that attending to ESG imposes an inverse effect on bank stability. It can be seen that the implementation of ESG in banks in ASEAN countries is at the expense of current sustainability. However, in the future, this relationship may be different. The findings support several implications for research and practice in the ASEAN banking environment.

IMPACT STATEMENT

While vast evidence has been accumulated in developed countries on the positive contribution of ESG to the stability of the bank, little is found in developing countries. We find significant evidence to support that banks in developing countries should be cautious with spending on ESG activities since it consistently and significantly suppresses the overall stability of the bank.

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1. Introduction

Environmental, Social, and Governance (ESG) considerations have gained significant importance in corporate decision-making. ESG is now essential for companies as they drive long-term value creation (Cek & Eyupoglu, 2020; Velte, 2017). Investors are increasingly factoring in ESG factors when making investment decisions (Azmi et al., 2021). Companies that prioritize ESG considerations are considered more attractive investment opportunities, especially for sustainable growth-focused, long-term investors (Buallay, 2019). Furthermore, ESG factors serve as a risk management tool, helping companies identify and mitigate potential issues before they escalate (Chen et al., 2023).

ESG has gained remarkable awareness in the banking industry, with banks incorporating ESG factors into their decision-making processes due to their significant influence on long-term sustainability and profitability (Citterio & King, 2023). Environmental factors encompass considerations like carbon emissions, energy consumption, and waste management. Social factors pertain to the bank's impact on society, including support for local communities, diversity and inclusion policies, and upholding human rights. Governance factors address internal management practices such as board composition, executive compensation, and risk management.

Banks that embrace ESG considerations in their operations can enjoy a range of benefits, including mitigated risks, enhanced reputation, and increased trust from stakeholders (Chiaromonte et al., 2022; Gangi et al., 2022). By integrating ESG principles into their practices, banks can also uncover new

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business opportunities and improve their financial performance (Arun et al., 2022; El Khoury et al., 2023). Recently, regulatory bodies have placed greater emphasis on ESG matters, leading many countries to enforce mandatory ESG reporting requirements for banks. This trend is expected to continue as ESG progressively gains significance within the banking sector (Arun et al., 2022; El Khoury et al., 2023).

The collapse of US banks (Silvergate, Signature, Silicon Valley, and First Republic Bank) and the volatile financial markets in recent years have placed bank stability in the spotlight. This ongoing financial turmoil has prompted banks to pay closer attention to factors that can make them more resilient and stable. The global commitment to sustainable development goals (SDGs) has further fueled such attention, as it has led to the emergence of ESG-related funds that offer significant financial support for bank initiatives on ESG. Even without the immediate urgency of global ESG concerns, banks are increasingly mindful of sustainability issues to enhance their reputation and foster trust and confidence among stakeholders (Park et al., 2014).

Bank stability refers to its ability to withstand adverse impacts (Abuzayed et al., 2018; Köhler, 2015; Nguyen et al., 2021). It depends on various factors, such as capital adequacy, which acts as a cushion against shocks, as well as the profitability of the bank, which strengthens this cushion. The volatility of both business outcomes and capital adequacy also plays a role in stability. Recent empirical research also highlights the importance of ESG factors in contributing significantly to the sustainability and stability of banks (Citterio & King, 2023; Harymawan et al., 2021).

Recent research has focused on exploring the link between ESG factors and various aspects of bank stability. Enhancing or prioritizing ESG scores is associated with reduced risk and increased trust among stakeholders (Harymawan et al., 2021; Park et al., 2014). However, it is noteworthy that risk reduction through ESG activities may potentially undermine shareholder value (Di Tommaso and Thornton (2020)). Additionally, the influence of individual component like environmental (E), social (S), and governance (G) on bank stability may differ. Citterio and King (2023) demonstrated that social factors play a key role in determining a bank's sustainability.

Despite the potential benefit in the long run, some banks opt to overlook ESG issues, particularly during challenging periods. Hobfoll et al. (2018) suggested that banks when facing financial constraints, prioritize their core activities to achieve efficiency gains rather than diverting their attention to ESG.

In brief, the existing literature presents two distinct perspectives. One advocates the integration of ESG practices to mitigate risks in the long run, while the other suggests a concentration on core activities and, to some extent, overlook of ESG considerations during difficult periods. Also, the ongoing debate surrounding the impact of ESG on bank stability primarily revolves around developed countries, while little evidence is found in other regions. This lack of empirical evidence elsewhere motivates our examination on the effects of ESG on the stability of ASEAN banks. Therefore, this study aims to evaluate the impact of ESG on bank stability. The study will be based on signaling and stakeholder theory to show whether ESG implementation in ASEAN banks increases or decreases bank sustainability. The research adopts a panel data analysis approach with ASEAN banks from 2015 to 2022. The System Generalized Method of Moments (SGMM) is employed in this study to address endogeneity issues. The research results will help banks assess the significance of implementing ESG for their banks. ESG policies, banking sustainability will become more effective based on actual data.

2. Literature review

2.1. Research context with ASEAN countries

Research on the correlation between Environmental, Social, and Governance (ESG) factors and bank stability in ASEAN countries is vital due to the region's susceptibility to environmental and social risks like climate change and social inequality. As ASEAN nations undergo rapid economic growth, sustainable development becomes increasingly crucial. Banks play a pivotal role in financing sustainable projects and transitioning to a low-carbon economy. Understanding how ESG factors intersect with banking operations can mitigate risks and foster resilience. Moreover, integrating ESG principles can attract investment capital, ensure regulatory compliance, and enhance reputation. Therefore, investigating this

relationship is essential for promoting financial stability, sustainable development, and responsible banking practices in the ASEAN region.

2.2. ESG constituents

ESG score is the representation of the company profile regarding environmental, social, and governance matters. While environmental factors illustrate issues such as carbon emissions, waste management, and natural resource use (Cek & Eyupoglu, 2020; Chen et al., 2023; Velte, 2017), social factors present a company's impact on society, labour practices, human rights, community relations, and customer privacy. In addition, the governance factor reflects the internal policies and procedures, executive compensation, board diversity, and shareholder rights. The widely known ESG index is calculated by Thomson Reuters. In some databases such as Refinitiv (one platform of Thomson Reuters' Datastream), each component of ESG is measured on a scale of 0 to 100 and carries a specific weight in the overall score. The Environmental score carries a weight of 33%, the Social score 35.5%, and the Governance score 30.5%. The composite ESG score on firm-level is increasingly attracted to investors, lenders, and other stakeholders as it represents overall sustainability (Fama, 2021). Companies exhibiting strong ESG performance (vis high ESG score) are considered more responsible and have a higher likelihood of delivering long-term value to shareholders (Cornell & Shapiro, 2021; Fama, 2021).

2.3. Theoretical framework

In signal theory, Spence (1978) theorized that the information asymmetry between parties to a contract can be bridged with signals on quality and other attributes. Between the bank and its clients, the former acts as the information provider who shares various information including ESG initiatives and practices. The completeness and quality of this information may vary depending on the disclosure strategy (Azmi et al., 2021; Harymawan et al., 2021; Zhang et al., 2022). The recipients of this ESG information are the shareholders, investors, and other stakeholders, who receive, decode and react accordingly. ESG score signals the level of the bank's commitment toward environmental, social, and governance issues, which can lead to positive or negative reactions and perceptions from the stakeholders.

Besides the signal theory, the stakeholder theory (Freeman, 2010) postulates that an exclusive focus on shareholder value maximization is insufficient to warrant long-term success. The interests of other stakeholders (e.g. investors, employees, customers, suppliers) should also be considered in strategic planning and decision-making. The increment performance, owing to being responsive to stakeholders' needs, may come in the form of improved customer satisfaction, employee productivity increase, and resilient connections with suppliers and investors (Freeman & Dmytriiev, 2017; Tian, 2023).

In addition, trust and legitimacy are also consolidated when the stakeholders' expectations are properly managed (Greenwood & Van Buren, 2010; Schnackenberg & Tomlinson, 2016). Firms will then be more likely to be trusted by their customers, employees, suppliers, and investors, which could further lead to sustainable sales increase, improved employee morale, and lower cost of capital (Azmi et al., 2021). Moreover, integrating environmental and social issues into the company's decision will also make the firm less likely to be disrupted by progressive social and environmental changes. Considering stakeholder theory, the disclosure of ESG is a proxy of the firm's responsiveness to various stakeholders' needs, which affect stakeholders' trust on the performance (Azmi et al., 2021) and other activities of the bank (Chiaromonte et al., 2022; Gangi et al., 2019; Zhang et al., 2022).

However, according to the overinvestment theory, increasing investment leads to a decrease in firm value (Titman et al., 2004) in the first five years of investment. Placed in the context of this study, investing in ESG activities may bring disadvantages to banks. The 'overinvestment theory' suggests that banks should not invest in ESG as it is a certain waste of resources for an uncertain outcome. Committing resources to ESG may lead to competitive disadvantages and compromise the bank's survivorship during financial turmoil and economic decline.

2.4. Hypothesis development

The positive effects of incorporating ESG in the decision-making of a firm have been documented in extant literature. According to stakeholder theory (Freeman, 2010), firms should be driven by the optimization of value for all stakeholders, including customers, debtors, employees, and regulatory authorities. Adopting a stakeholder management approach enhances contractual efficiency (Jones, 1995). Companies that engage in ESG practices implicitly demonstrate their commitment to meeting stakeholder demands and mitigate expenses associated with complying with formal contractual agreements, such as union contracts and government regulations (Azmi et al., 2021). Furthermore, ESG initiatives create an opportunity for corporate innovation, competitive advantage, and growth rather than a cost, philanthropy, or constraint (Porter & Kramer, 2006). In the banking sector, ESG-related activities help banks gain more stakeholder interest (Azmi et al., 2021). Bank could reduce its business risk with greater investment in social change initiatives since the resulting moral capital and stockholder goodwill can act as insurance in the economic downturn (El Ghouli & Karoui, 2017).

The skepticism of unsustainable practices is not uncommon in the banking environment. Banks have been a major lender to fossil fueled energy companies. They take a significant role in financial crises by taking excessive risk and jeopardizing financial stability (Trinh et al., 2023). Regarding governance issues, they have been under scrutiny for being involved in trade scandals and money laundering (Ross, 2023). Thus, the commitment of funding on ESG initiatives sends a positive signal to the stakeholders, which balance their perspective on the financial and sustainable conviction of the bank. As a result, the firm can attain incremental gains from new opportunities, innovation, competitive advantages while reducing future sustainability compliance risk and business risk. Although we are aware of the 'overinvestment theory', we are convinced by the widely documented evidence of ESG's positive effects. Therefore, the research hypothesis is presented:

Hypothesis: *ESG has a positive impact on a bank's stability*

The empirical effect of ESG on stability is controlled for confoundedness by including conventional variables in the literature such as size, credit growth, capital structure, and the alternative source of bank income (i.e. non-interest income). First, bank size may cause both negative and positive impacts on its stability. Large banks are more difficult for the government to bail out when they collapse (Boyd & Runkle, 1993; Galletta & Mazzù, 2023). However, greater bank size embeds a thicker buffer for adverse effects, thereby making the bank less susceptible to bankruptcy. Second, the growth rate of loans is a relevant control since loans are the main source of the bank's income (Chiaromonte et al., 2022). The focus on lending and loan growth can boost revenue, hence enhancing resilience and stability. Third, the leverage structure is added to the regression equation since a greater level of equity over total assets improves the bank's capability to deal with adverse effects (Chiaromonte et al., 2022). Finally, Non-interest income is added to the control list because the auxiliary income source strengthens the immunization of the bank against market volatility (DeYoung & Roland, 2001). In addition to common control variables, the study also references some control variables from CAMEL variables, encompassing Capital adequacy, Asset quality, Management efficiency, Earnings, and Liquidity, as these factors significantly influence a bank's stability. Non-performance loans, profit, and liquidity variables are added to the model as control variables. Additionally, the study also incorporates the impact of macroeconomic factors such as economic growth, inflation, and bank concentration (Phan et al., 2019).

3. Method

3.1. Research model

Upon the signaling theory, stakeholder theory, and previous studies by Chiaromonte et al. (2022) and Di Tommaso and Thornton and (2020), the research model is presented as follows:

$$Bank\ stability_{it} = \gamma + \beta_1 * ESG + \beta_2\ Control\ variables_{it} + \beta_2\ COVID - 19_{it} + v_i + \varepsilon_{it}$$

The variables are described in Table 1.

Table 1. The variables.

Variable	Description	Calculated	Expected
<i>Dependent variable: Bank's stability adapted from Chiaramonte et al. (2022); Di Tommaso and Thornton (2020); Nguyen et al. (2021)</i>			
Z-score		$(ROA + CAR) / SDROA$	
<i>Independents variables: ESG adapted from Chiaramonte et al. (2022)</i>			
ESG	A composite score is calculated on E, S, and G scores.	ESG score	(+)
<i>Bank Control variables adapted from Nguyen et al. (2021)</i>			
SIZE	Bank size	$\ln(\text{Total assets})$	(+)
LOANS	Loan growth rate	$(\text{Loan}_t - \text{Loan}_{t-1}) / \text{Loan}_{t-1}$	(+)
ETA	Equity ratio	$\text{Equity} / \text{Total assets}$	(+)
NII	Non-interest Income	$\text{Non-interest Income} / \text{Net operating revenue}$	(+)
NPL	Non-Performance Loan	$\text{Non-Performance Loan}$	(-)
ROA	Profit	$\text{Return} / \text{Total assets}$	(+)
LIQ	Liquidity	$\text{Liquid assets} / \text{Total assets}$	(+)
<i>Crisis</i>			
COVID	COVID-19 period	The dummy variable equates to 1 in COVID-19 period, 0 otherwise	(-)
<i>Macroeconomic control variables adapted from Phan et al. (2019)</i>			
GRGDP	Economics annual growth	Economics annual growth	(+)
INF	Inflation	Inflation	(+)
Bank_Con	Bank concentration	Bank concentration	(+)

3.1.1. Dependent variable

Z-score is calculated as the sum of ROA and CAR over SDROA, where ROA is the bank's return on assets, CAR is the ratio of Equity to banks' assets, and SDROA is the standard deviation of ROA (Citterio & King, 2023). Z-score has been widely used as an accounting proxy for bank stability in the literature (Bartholdy & Justesen, 2021; Beck & Laeven, 2006).

3.1.2. Independent variable

ESG scores are combined measures that consider three main components, including E, S, and G (Chang et al., 2014; Chiaramonte et al., 2022; Sassen et al., 2016). The E, S, and G indices reflect different aspects of a company's sustainability performance. The E index evaluates the company's resource use, emissions, and environmental innovation. The S index measures job satisfaction, diversity, workplace health, and human rights. The G index looks at the company's compliance with best practices, equal treatment of shareholders, and incorporation of non-financial objectives in strategic and managerial decisions. The information regarding ESG factors is directly sourced from Thomson Reuters, which aligns with our particular area of focus. The ESG scores available in Thomson Reuters' Datastream are formulated to provide an impartial and clear assessment of a company's ESG performance. This assessment relies on the company's self-reported data spanning ten overarching themes.

3.2. Data

Panel data will be used for comparison with the examination of listed banks in 2015–2022. Only banks with ESG data for at least three consecutive years are selected. Although the ESG reporting in ASEAN is rather limited, we still aim to retain banks with ESG data for at least five consecutive years, which results in a drop from 109 to 30 banks in the dataset. The study conducts outlier removal using winsorization at the 1st and 99th percentiles before analysis. The descriptive statistics of all variables are presented in Table 2 which illustrates the means, standard deviations, and ranges of values. While ESG reporting requirement is rather new in ASEAN, some banks have maintained good track of ESG records for many years. On average, each bank in the final sample keeps an ESG track record of eight years. The total number of observations is 216.

3.3. Data analysis

Three models are employed for panel data analysis, depending on the characteristics of the research fields. The Pooled OLS model is the simplest but is rarely used as it does not account for the heterogeneity among banks. The Fixed effect model (FEM) can deal with the heterogeneity issue, as well as the

Table 2. Descriptive variables.

VarName	Mean	SD	Min	Max
ZSCORE	56.968	28.279	9.766	114.735
ESG	61.905	12.917	33.237	86.207
TOTAL ASSETS (USD)	9.41e + 10	1.08e + 11	7.16e + 09	5.09e + 11
SIZE	24.714	1.095	22.692	26.955
ETA	0.118	0.032	0.064	0.232
LOAN	0.058	0.075	−0.112	0.242
NPL	0.017	0.010	0.003	0.047
ROA	0.013	0.006	0.000	0.033
LIQ	0.165	0.070	0.012	0.366
GDP	3.314	3.742	−9.500	8.900
INF	2.475	2.578	−2.700	9.600
Bank_Con	49.822	11.693	39.814	87.240
N = 240				

correlation between the residuals and independent variables. The Random effect model (REM) is similar to the FEM model regarding how banks differ from each other. However, it assumes no relationship between the residuals and independent variables. The choice between FEM and REM is determined via the Hausman test.

With the inherent endogeneity issue of panel data, we employ the GMM estimator proposed by Blundell and Bond (2000). In the two-step system GMM, the endogeneity is addressed by employing instruments such as second- and higher-order lagged dependent variables, as well as differences of the dependent variable (Roodman, 2009).

4. Result

The Pooled OLS, FEM, and REM models are performed in sequence. The Pooled OLS model cannot reflect the differences between banks, so it cannot continue to be analyzed. Between FEM and REM models, the Hausman test indicates that the FEM model is more suitable for the data. However, there is a relationship between the residual and independent variables in the FEM model (see Table 3). The regression in Table 3 illustrates that the endogeneity affects the result (make bias result, so the result is not reliable in Table 3 when the endogeneity phenomenon is not addressed). So the SGMM is suitable in this situation, and the results will be analyzed on SGMM.

Therefore, the results from the SGMM model will be used for the robustness check since they are free from the endogeneity problem. The SGMM test parameters are satisfactory for the robust result in that AR(1) has p -value greater than 0.05, AR(2) has a p -value greater than 0.05, and the Hansen test has a p -value greater than 0.05. Details are in Table 4.

A further robustness check on subsamples is conducted by analyzing the impact of ESG on bank stability across banks with three subsets, each with different levels of return (i.e. lower, medium, and higher). The lower return set includes observations with returns in the range of 0 to below the 25th percentile of the return series; the medium return subset from the 25th percentile to below the 75th percentile; and the higher Return subset from the 75th to 100th percentile. We find that the impact of ESG on bank stability was similar across banks with different return levels in that ESG had a consistently negative impact on bank stability (see Table 5). These results show that banks have different profit levels, and the impact of ESG on a bank's stability is inconsistent across them.

Based on the results of the SGMM model analysis, it has been found that ESG has a significant negative impact on ZSCORE. The negative impact is indicated by the $\beta < 0$, and it is statistically significant at the 1% level. This suggests that a strong ESG rating compromises the stability of the bank. This finding unexpectedly supports the 'overinvestment view' and it is consistent with the conclusions of Harymawan et al. (2021), who also found that financial, human resources and time spent on ESG activities undermine the stability of a bank. Our finding is different from ones found in many studies in the literature such as Chiaramonte et al. (2022) and Park et al. (2014). It implies that, in ASEAN, investing in ESG initiatives drains the bank's resources and hence exerts negative effects on its stability. In general, the ASEAN region comprises developing countries overall, and the financial markets are also developing

Table 3. The regression result.

Z-SCORE	(1) Pooled OLS	(2) FEM	(3) REM	(4) Pooled OLS	(5) FEM	(6) REM
ESG	−0.149 (0.186)	0.134*** (0.0219)	0.121*** (0.0228)	−0.120 (0.196)	0.133*** (0.0224)	0.123*** (0.0233)
<i>Bank control variables</i>						
SIZE	9.202*** (3.401)	−2.628* (1.381)	−1.230 (1.382)	8.734** (3.547)	−2.723* (1.463)	−1.152 (1.437)
LOAN	−24.58 (17.69)	1.165 (1.478)	0.499 (1.557)	−25.53 (17.84)	1.214 (1.503)	0.454 (1.566)
ETA	−64.18 (102.0)	328.7*** (20.84)	317.6*** (21.77)	−67.62 (102.5)	329.3*** (21.12)	317.2*** (21.85)
NII	−52.84*** (16.97)	3.593 (4.802)	6.274 (4.970)	−54.29*** (17.28)	3.674 (4.837)	5.967 (4.990)
NPL	−1.323*** (240.8)	−55.51 (47.55)	−64.26 (50.00)	−1.327*** (241.6)	−55.96 (47.79)	−62.99 (49.91)
ROA	300.5 (449.3)	68.97 (53.77)	68.45 (56.90)	285.8 (451.5)	66.88 (54.94)	72.06 (57.65)
LIQ	−97.82*** (30.61)	−15.32*** (4.467)	−17.85*** (4.674)	−94.28*** (31.57)	−15.45*** (4.527)	−17.48*** (4.722)
<i>Economics control variables</i>						
GDP	−0.326 (0.623)	−0.0132 (0.0489)	−0.00657 (0.0519)	−0.633 (0.896)	−0.00328 (0.0692)	−0.0243 (0.0726)
INF	−1.669 (1.188)	−0.0763 (0.0899)	−0.0869 (0.0955)	−1.394 (1.323)	−0.0840 (0.0979)	−0.0727 (0.103)
Bank_Con	0.106 (0.258)	0.292*** (0.0962)	0.375*** (0.0977)	0.122 (0.261)	0.284*** (0.105)	0.384*** (0.104)
<i>Crisis control variable</i>						
COVID				−3.442 (7.191)	0.129 (0.633)	−0.225 (0.656)
Constant	−98.19 (72.89)	67.29* (35.00)	25.59 (34.75)	−86.97 (76.75)	70.05* (37.64)	23.21 (36.58)
Observations	164	164	164	164	164	164
R-squared	0.321	0.854		0.322	0.854	
Number of i		29	29		29	29
Hausman test			0.000			0.000

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.**Table 4.** The regression with SGMM.

ZSCORE	(1) SGMM	(2) SGMM	(3) SGMM	(4) SGMM	(5) SGMM	(6) SGMM	(7) SGMM	(8) SGMM	(9) SGMM	(10) SGMM	(11) SGMM
ZSCORE _{t-1}	0.986*** (0.00396)	0.985*** (0.00509)	0.992*** (0.00322)	0.971*** (0.0107)	0.972*** (0.00626)	0.965*** (0.00952)	0.969*** (0.00325)	0.983*** (0.00471)	0.985*** (0.0109)	0.991*** (0.0171)	0.979*** (0.00902)
ESG	−0.0766*** (0.00944)	−0.0824*** (0.0110)	−0.0328** (0.0142)	−0.0558*** (0.0203)	−0.0706*** (0.00972)	−0.0740*** (0.0114)	−0.0416** (0.0187)	−0.0895*** (0.0103)	−0.151*** (0.0204)	−0.230*** (0.0327)	−0.183*** (0.0176)
SIZE		0.263 (0.221)	−0.200* (0.107)	0.538 (0.446)							
LOAN			10.37*** (1.959)	7.176** (3.010)							
ETA				56.65*** (11.70)							
NII				6.785** (3.244)							
ROA					432.7*** (43.42)	475.3*** (45.15)	507.7*** (49.77)				
NPL						−60.63 (38.91)	41.97 (27.91)				
LIQ							−14.95*** (3.069)				
GDP								−0.0969*** (0.0173)	−0.295*** (0.0357)	−0.446*** (0.0665)	
INF									0.439*** (0.0514)	0.500*** (0.146)	
Bank_Con										0.0307 (0.0661)	
COVID											2.003*** (0.197)
Constant	6.105*** (0.466)	0.0418 (5.239)	7.376*** (2.453)	−17.52 (11.93)	1.133** (0.556)	1.984* (1.152)	0.623 (1.122)	7.345*** (0.476)	10.79*** (1.430)	13.84*** (3.297)	12.50*** (0.890)
Observations	=240; Number of banks =30										
AR(2)	0.426	0.436	0.560	0.491	0.749	0.546	0.286	0.496	0.402	0.379	0.565
Hansen test	0.414	0.369	0.285	0.201	0.264	0.227	0.388	0.400	0.200	0.227	0.289

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5. The regression is classified by level of return.

Variables	(1) Lower return	(2) Medium return	(3) Higher return
ZSCORE _{t-1}	0.969*** (0.0135)	0.926*** (0.0113)	1.025*** (0.0428)
ESG	-0.134*** (0.00428)	0.0347** (0.0141)	-0.0930*** (0.0199)
Constant	9.285*** (0.580)	3.952*** (0.437)	5.826* (3.299)
Observations	50	100	47

Note. Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

(except for Singapore). Given the context of some countries, the implementation of ESG does not necessarily stem from the desire of banks. Instead, it often comes from demands from stakeholders. Therefore, passive or enforced implementation leads to resource depletion in the short term.

The Table 5 demonstrates that ESG has a positive impact on ZSCORE in the medium return banks. This result is different with lower return and higher return banks. Since 'High risk, high profit' means the banks with medium return are typically moderately risky and stable. Investing in ESG criteria can help improve a bank's reputation, attract customers and investors, and thereby increase its sustainability (Chiaromonte et al., 2022). Besides, the lower return banks have lower risk, and when the return is low, banks need to focus on increasing operational efficiency and cutting costs. ESG investments can require significant financial and human resources, which can increase costs and reduce short-term profits, leading to reduced sustainability (Harymawan et al., 2021). Additionally, shareholders of highly profitable banks often expect continued earnings growth. Investing heavily in ESG may be unpopular with shareholders if they perceive it as having a negative impact on earnings, leading to a loss of sustainability due to investor confidence (Harymawan et al., 2021).

The research results also indicate that loan growth has a significant positive impact on the bank's stability, as evidenced by the $\beta > 0$, which is statistically significant at the 1% level. Loan growth plays a pivotal role in enhancing a bank's stability through several positive impacts. Firstly, increased lending activity indicates a healthy demand for credit, signaling economic growth and stability within the community served by the bank. This growth fosters revenue generation for the bank, which can then be utilized to strengthen its capital reserves, thus fortifying its financial position. Moreover, a diverse portfolio of loans mitigates risks associated with any single sector, enhancing the bank's resilience to economic fluctuations. This finding is consistent with Chiaromonte et al. (2022).

Furthermore, The SGMM regression results suggest that ETA, representing the capital ratio, has a positive and statistically significant impact on the bank's stability ($\beta = 70.98$ and statistically significant). This result shows that the higher the capital ratio, the more it reassures the bank's sustainability. This finding is consistent with Chiaromonte et al. (2022), who suggest that a higher capital ratio is associated with increased capital strength and safety for banks. It also aligns with the notion that a well-capitalized bank is better equipped to handle risks and preserve stability in the face of financial challenges.

Non-interest income (NII) has a significant positive impact on a bank's stability. This finding is consistent with Nguyen et al. (2021); Chiaromonte et al. (2022); Mergaerts and Vander Vennet (2016). This finding suggests that diversifying into non-interest activities (or fee-based services, such as assets management, investment banking, and insurance) enhance the stability of the bank in ASEAN. Non-interest income plays a crucial role in bolstering a bank's stability by diversifying its revenue streams and reducing dependency on interest-related income. This type of income encompasses various sources such as fees from financial services, trading activities, and asset management. Diversification shields banks from fluctuations in interest rates and economic cycles, thus enhancing their resilience. Moreover, non-interest income tends to be more stable and predictable than interest income, providing a consistent source of revenue even during economic downturns.

ROA has a positive impact on bank's stability. This finding is consistent with Nguyen et al. (2021). Profit serves as a cornerstone for bolstering a bank's stability by underpinning its financial health and resilience. A profitable bank signifies efficient operations, prudent risk management, and a strong customer base. These factors instill confidence among depositors, investors, and regulators, reinforcing the

institution's stability. Profitability allows banks to build robust capital reserves, providing a buffer against unexpected losses and economic downturns. Moreover, profitable banks can attract talent and invest in technology and infrastructure, enhancing operational efficiency and customer service.

LIQ hurts the bank's stability. This result shows that Liquidity shortages can severely undermine a bank's stability, posing significant risks to its operations and financial health. Insufficient liquidity means a bank may struggle to meet its short-term obligations, such as customer withdrawals and payment settlements. This can lead to panic among depositors, triggering bank runs and damaging the institution's reputation. Inadequate liquidity management also exposes banks to funding risks, as they may resort to expensive short-term borrowing or asset sales to cover liquidity shortfalls.

GDP growth hurts bank's stability. This finding is consistent with Chiaramonte et al. (2022). While GDP growth typically indicates a healthy economy, overly rapid expansion can pose challenges for bank stability. Moreover, rapid GDP growth may lead to asset bubbles, such as in real estate or stock markets, which, if they burst, can trigger loan defaults and decrease asset values, affecting bank balance sheets. Additionally, rapid economic growth can strain regulatory oversight, potentially increasing systemic risks. INF has a positive impact on a bank's stability. This results are consistent with Phan et al. (2019). Inflation can have a positive impact on a bank's stability under certain circumstances. As prices rise, the value of assets held by banks, such as real estate, tends to appreciate, bolstering their balance sheets. Moreover, inflation can reduce the real value of outstanding debts, making them easier for borrowers to repay, thereby lowering default risks. Additionally, in an inflationary environment, central banks typically raise interest rates, which can improve banks' net interest margins. Overall, moderate inflation can contribute to a stable and profitable banking environment.

Regarding the impact of COVID-19 on banks' stability, the SGMM regression results reveal a negative and statistically significant effect. The coefficient $\beta < 0$, implying that during the COVID-19 crisis, the bank's ZSCORE is expected to decrease. The finding is consistent with the notion that the pandemic causes bank disruption and market volatility, which strains the resilience of the bank.

5. Conclusion and implications

The study has revealed the existence of a relationship between ESG and the stability of banks within the ASEAN countries. Particularly, the research is grounded in relevant theories such as stakeholder theory and signal theory, which highlight the efforts made by banks in their ESG-related activities. However, up to the point of the study, the push for enhanced ESG activities within banks has not yet yielded sustainable outcomes. Investing in ESG requires more resources, and in the short term, it has not shown clear effectiveness for banks in the ASEAN region. Based on these results, we also provide several implications.

5.1. Theoretical implication

Our findings, while contrasting with the prediction of signal and stakeholder theory, suggest that investing in ESG activities compromises the stability of ASEAN commercial banks. The fact that banks implement ESG more indicates a commitment to allocating more resources towards corporate social responsibility activities. This aligns with the overinvestment theory. Consequently, this is a signal of resource depletion and reduced sustainability in the short term. Furthermore, the results also suggest that investors and managers in ASEAN banks might not prioritize or pay significant attention to ESG factors in their decision-making.

5.2. Practical implication

While our study advocates for the short-term costs or disruptions arising from investing in ESG activities, evidence in the literature suggests that banks that prioritize sustainability and social responsibility often achieve improved financial performance over the long term. Integrating ESG into banks strategies can contribute to enhanced risk management, operational efficiency, and reputation, and provide access to the green capital market. Moreover, with the growing global focus on sustainability and responsible

investing, maintaining ESG initiatives can also help banks meet the evolving expectations of investors and customers. In general, overinvestment leading to a decrease in value as well as the sustainability of banks will help stakeholders develop appropriate policies. For investors, they will make decisions regarding their investments by considering the investment situation in implementing ESG of banks. Particularly for policymakers, overinvestment relates to the issue of governance. Therefore, clear regulations are needed for implementing ESG in enterprises. Mandatory policies or widespread policies for banks enhance awareness of practicing social responsibility.

6. Limitation and future research

Although studies have shown the adverse impact of ESG on bank stability, there are still some limitations to the research. Firstly, in terms of the research model, the study used a general ESG score for each bank. The ESG index includes environmental, social, and governance indicators, but due to limitations in data collection, the study has not evaluated each component in detail. With more data on the component level, we could examine which factor (E, S, or G) imposes significant effects on the bank's stability.

Secondly, the study has not considered the change in the value of the bank when ESG increases. The relationship between ESG and the bank's value is not that straightforward. While ESG commitment can raise costs and harm the bank's stability in difficult periods, it can also make incremental contributions to value and stability through balancing financing and ESG conviction. Thus, it is necessary for a future examination of the net effect and the potential trade-offs associated with ESG integration into a bank's operation.

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Authors' contribution

Lan. H. conceived of the idea and supervised the progress of the research. Hai. H developed the theoretical framework and performed the computations. Cuong M. and Nga T. verified the analytical methods. Lan H. encouraged Hai H. to account for the effects of more control variables and supervised the findings of this work. Son. N provided critical feedback and helped review the overall results. All authors discussed the results and contributed to the final manuscript.

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Data availability statement

The authors confirm that the data used in this study is extracted from Refinitiv Eikon data platform. It is available within this article and its supplementary materials.

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