
The Impact of ESG Performance on Bank Profitability: Evidence from ASEAN-5

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ABSTRACT

This study examines whether Environmental, Social, and Governance (ESG) performance contributes to bank profitability in ASEAN-5 countries. As sustainability principles increasingly shape financial markets, banks are expected not only to perform their intermediation role efficiently but also to operate ethically and responsibly. However, empirical evidence on whether ESG performance translates into tangible financial benefits remains mixed, particularly in emerging markets. Using balanced panel data of commercial banks operating in Indonesia, Malaysia, Thailand, the Philippines, and Singapore over the period 2015–2024, this study applies a Fixed Effect Model to analyze the relationship between ESG performance and bank profitability, measured by Return on Assets (ROA) and Return on Equity (ROE). The model incorporates bank-specific control variables total deposits, total loans, and total assets as well as macroeconomic conditions captured by inflation and economic growth. The empirical results show that ESG performance has a positive and statistically significant effect on both ROA and ROE, indicating that ethical banking practices enhance operational efficiency and shareholder returns. Economic growth strengthens profitability, while inflation exerts a negative effect. These findings suggest that ESG performance represents more than reputational signaling; it functions as a strategic asset that supports long-term financial performance. This study contributes to the sustainable finance literature by providing multi country empirical evidence from ASEAN-5 banks and offers insights for regulators, banks, and investors in emerging markets.

Keywords: ESG Performance, Bank Profitability, ASEAN-5, Panel Data, Ethical Banking

INTRODUCTION

The global financial system has undergone a structural transformation driven by rising environmental risks, social expectations, and governance challenges (Ferrell et al., 2016). Climate change, social inequality, and corporate malfeasance have increased scrutiny of financial institutions, particularly banks, which play a central role in capital allocation and risk transmission (Weber, 2017). As a result, banks are increasingly expected to integrate sustainability and ethical considerations into their core business strategies, rather than treating them as fringe issues (Ferrell et al., 2016; Weber, 2017).

The *principles of Environmental, Social, and Governance* (ESG) have emerged as the dominant framework for assessing corporate sustainability and ethical behavior (Weber, 2017). ESG provides a multidimensional lens through which stakeholders assess how companies manage environmental risks, meet social responsibility, and uphold governance standards (Ferrell et al., 2016). In the banking sector, ESG performance reflects ethical lending policies, responsible risk management, transparency, and

accountability, which are factors closely related to financial stability (Scholtens & van 't Klooster, 2019; Broadstock et al., 2021).

Bank profitability remains an important indicator of institutional resilience and its contribution to the economy (Menicucci & Paolucci, 2016). Measures of profitability such as *Return on Assets* (ROA) and *Return on Equity* (ROE) describe the efficiency of banks in utilizing assets and generating returns for shareholders (Menicucci & Paolucci, 2016). Traditional banking theory emphasizes fundamental financial factors such as deposits, credit, and asset size. However, recent literature suggests that non-financial factors, including ESG performance, can influence profitability through the formation of risk profiles, stakeholder trust, and reputational capital (Orlitzky et al., 2003; Menicucci & Paolucci, 2016).

Although interest in sustainable finance continues to grow, the relationship between ESG performance and bank profitability is still debated (Servaes & Tamayo, 2013). Some studies have found positive associations and argue that strong ESG practices lower long-term risk as well as improve efficiency (Gangi et al., 2019). Other studies report insignificant or context-dependent influences, especially in emerging markets where regulatory enforcement and market discipline are diverse (Nizam et al., 2019). These diverse findings suggest that the ESG–profitability relationship is sensitive to institutional conditions, economic conditions, and sectoral characteristics (Servaes & Tamayo, 2013; Gangi et al., 2019).

The ASEAN-5 region, namely Indonesia, Malaysia, Thailand, the Philippines, and Singapore, is an interesting context to test this relationship (Laeven et al., 2016). These five countries have heterogeneous financial systems with varying levels of ESG maturity, regulatory frameworks, and economic developments (Allen et al., 2016). Some banks in the region have made great strides in integrating ESG, while others are still in their early stages and tend to focus on disclosure, rather than substantive performance (Nizam et al., 2019). However, empirical research with an ASEAN-5 multi-country perspective is still limited (Allen et al., 2016; Laeven et al., 2016).

This study aims to fill this gap by examining whether ESG performance increases the profitability of banks in ASEAN-5 countries during the period 2015–2024. Using panel data regression with *the Fixed Effect Model* and incorporating bank-specific variables and macroeconomic variables, this study presents empirical evidence on the financial relevance of ESG performance in emerging market banking markets, following an approach that has been established in previous banking studies (Menicucci & Paolucci, 2016; Broadstock et al., 2021).

RESEARCH METHODS

This study uses a quantitative approach with panel data regression analysis. The panel data methodology is very appropriate because it combines *cross-section* and time series dimensions, thus allowing for more efficient estimation and better control of unobserved heterogeneity between banks and between countries (Menicucci & Paolucci, 2016; Hou et al., 2014).

To determine the most appropriate estimation technique, three panel data models were considered: *Common Effect Model* (CEM), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM). Model selection was carried out by the Chow test to compare CEM and FEM, then the Hausman test to choose between FEM and REM (Hausman, 1978). The test results showed that FEM is the most appropriate specification because it is able to capture the specific characteristics of banks that are constant over time but differ between entities (Menicucci & Paolucci, 2016).

To ensure the robustness of the estimated coefficient, classical diagnostic tests are performed, namely multicollinearity, heteroscedasticity, and autocorrelation tests. If necessary, *robust standard errors* are used to reduce the likelihood of violations of classical assumptions (Gujarati & Porter, 2009). All estimates are performed using EViews software.

Data Sources and Sample Selection Criteria

The data used are secondary data from various reliable sources. ESG performance data is obtained from the Refinitiv ESG Database, which provides standardized ESG scores and is widely used in empirical research. Bank-level financial data, namely *Return on Assets* (ROA), *Return on Equity* (ROE), total deposits, total credit, and total assets, are obtained from annual reports and financial statements audited by banks. Macroeconomic variables, namely inflation and economic growth, are sourced from the World Bank database.

The sample consists of commercial banks operating in ASEAN-5 countries, namely Indonesia, Malaysia, Thailand, the Philippines, and Singapore, during the period 2015–2024. The sample was selected using *purposive sampling techniques* based on the following criteria:

- a. ESG scores are available for the entire observation period.
- b. Full financial data required for analysis is available.
- c. Consistent reporting thus forms a balanced panel of data.

Banks that do not meet these criteria are excluded from the sample to maintain the reliability and consistency of the data.

Data Collection Techniques

The data collection process includes the collection of ESG scores from the Refinitiv database, financial data from the bank's annual reports, and macroeconomic indicators from the World Bank database. The collected data is then compiled and processed into balanced panel data for the 2015–2024 period.

In order for the data to be comparable and the effect of scale reduced, the monetary variables, i.e. total savings, total credit, total assets, and gross domestic product (GDP), are transformed into natural logarithms. This transformation is commonly used in banking and financial studies to reduce *skewness*, stabilize variance, and increase the linearity of relationships between variables (Hou et al., 2014; Menicucci & Paolucci, 2016).

Variables and Measurements

The dependent variable in this study is the bank's profitability as measured by *Return on Assets* (ROA) and *Return on Equity* (ROE), which reflect asset efficiency and return for shareholders, respectively (Menicucci & Paolucci, 2016).

An independent variable is ESG performance, which is proxied by ESG scores from the Refinitiv database. ESG performance reflects the extent to which banks integrate environmental, social, and governance practices into their operations (Weber, 2017; Scholtens & van 't Klooster, 2019).

Control variables include bank-specific factors and macroeconomic variables, namely total deposits, total credit, total assets, inflation, and economic growth. These variables are included to isolate the influence of ESG performance on the bank's profitability as well as to account for internal operational characteristics and external economic conditions (Bitar et al., 2017; Nguyen & Nguyen, 2020).

Model Specifications

The empirical model tests the influence of banking ethics, proxied by ESG performance, on a bank's profitability. Profitability is measured by two indicators, namely *Return on Assets* (ROA) and *Return on Equity* (ROE). The model incorporates bank-specific control variables and macroeconomic factors to isolate the influence of ESG performance on profitability (Gangi et al., 2019; Nizam et al., 2019). The basic regression equation is formulated as follows:

- a. Model 1: ESG and Asset-Based Profitability

$$ROA_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 DEP_{i,t} + \beta_3 LOAN_{i,t} + \beta_4 ASSET_{i,t} + \varepsilon_{i,t}$$

- b. Model 2: ESG and Equity-Based Profitability

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 DEP_{i,t} + \beta_3 LOAN_{i,t} + \beta_4 ASSET_{i,t} + \varepsilon_{i,t}$$

To take into account macroeconomic conditions, the model is extended as follows.

- a. Model 3: ESG, Macroeconomic Factors, and ROA

$$ROA_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 DEP_{i,t} + \beta_3 LOAN_{i,t} + \beta_4 ASSET_{i,t} + \beta_5 INF_{i,t} + \beta_6 GDP_{i,t} + \varepsilon_{i,t}$$

- b. Model 4: ESG, Macroeconomic Factors, and ROE

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 DEP_{i,t} + \beta_3 LOAN_{i,t} + \beta_4 ASSET_{i,t} + \beta_5 INF_{i,t} + \beta_6 GDP_{i,t} + \varepsilon_{i,t}$$

Description:

1. I declares the I bank and t declares the year T .
2. ESG is *Environmental, Social, and Governance performance*.
3. DEP is the total deposit.
4. LOAN is total credit.
5. ASSET is the total asset.
6. The INF is inflation.
7. GDP is economic growth.
8. β is the estimated coefficient.
9. ε is an error term.

Data Analysis Techniques

The data were analyzed using panel data regression techniques. Three models were considered, namely *Common Effect Model* (CEM), *Fixed Effect Model* (FEM), and *Random Effect Model* (REM). Model selection was carried out by the Chow test to compare CEM and FEM, then the Hausman test to determine the right model between FEM and REM (Hausman, 1978).

The results of the model selection test show that the *Fixed Effect Model* (FEM) is the most appropriate specification because it takes into account the unobserved heterogeneity between banks that can affect profitability but is constant all the time (Menicucci & Paolucci, 2016).

To ensure the robustness of the estimation results, several diagnostic tests were performed, namely multicollinearity, heteroscedasticity, and autocorrelation tests. If necessary, *robust standard errors* were used to overcome possible violations of classical assumptions (Gujarati & Porter, 2009). All statistical analysis was carried out with EViews software.

Diagnostic Tests and Model Robustness Tests

To ensure the validity and reliability of the regression results, several diagnostic tests were performed. First, multicollinearity was checked to ensure that independent variables were not highly correlated with each other. Second, heteroscedasticity tests were performed to check the consistency of error variance. Third, autocorrelation tests were performed to detect serial correlations in the panel data. In addition, model selection tests, namely the Chow test and the Hausman test, were applied to determine the most appropriate estimation model. The results showed that *the Fixed Effect Model* (FEM) was the most suitable specification. These diagnostic tests ensured that the estimated model met classical assumptions and provided reliable and robust results.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 presents descriptive statistics of all variables used, based on balanced panel data from 29 commercial banks in ASEAN-5 countries during the period 2015–2024 with a total of 290 observations. This table contains the mean values, standard deviations, minimums, and maximums of each variable as an overview of the characteristics of the data distribution before the regression analysis (Menicucci & Paolucci, 2016).

Table 1. Descriptive Statistics

Variabel	Obs.	Average	Default deviation	Min.	Max.
ESG Score	290	61,74	14,25	23,79	89,11
<i>Return on Assets</i> (ROA)	290	1,39	0,91	0,40	9,00
<i>Return on Equity</i> (ROE)	290	0,11	0,04	0,02	0,25
Total deposits (ln)	290	24,97	2,48	20,46	26,85
Total gross loans (ln)	290	24,90	2,42	20,33	26,66
Total assets (ln)	290	25,29	2,51	20,98	27,14
Inflation (%)	290	2,21	2,09	−1,61	8,48
PDB (ln)	290	27,06	0,56	26,43	27,97

(Source: Calculation using panel data, 2015–2024.)

In order to be comparable between banks of different sizes and to reduce the effect of scale, all monetary variables, i.e. total deposits, total credit, total assets, and gross domestic product (GDP), are transformed into natural logarithms. This transformation is commonly used in banking and financial studies to reduce volatility, stabilize variance, and increase the linearity of relationships between variables. Therefore, descriptive statistics of these variables are presented in logarithmic form, according to the specifications used in regression models (Hou et al., 2014; Menicucci & Paolucci, 2016).

The average ESG score of banks in the sample was 61.74, indicating a moderate level of environmental, social, and governance performance in ASEAN-5 banking institutions. However, relatively high standard deviations indicate large heterogeneity in ESG implementation, reflecting differences in regulatory environments, governance structures, and sustainability strategies between banks and between countries (Gangi et al., 2019; Nizam et al., 2019).

In terms of profitability, the average *return on assets* (ROA) is 1.39 percent, while the average *return on equity* (ROE) is 0.11. This shows a variation in operational efficiency and return for shareholders. The distribution of ROA and ROE values highlights the differences in asset utilization, capital structure, and managerial effectiveness between banks in the sample (Menicucci & Paolucci, 2016).

Bank size and intermediation activity, as proxied by the logarithm of total deposits, total credit, and total assets, also showed considerable variation. This indicates differences in funding capacity, credit disbursement intensity, and scale of operations among ASEAN-5 banks (Nguyen & Nguyen, 2020). Meanwhile, the average inflation during the observation period was 2.21 percent with considerable fluctuations, reflecting changes in macroeconomic conditions. Economic growth, as measured by the natural logarithm of GDP, also varies over time and between countries, capturing differences in macroeconomic performance in the ASEAN-5 region (Bitar et al., 2017; Laeven et al., 2016).

Overall, descriptive statistics show sufficient variation in the dimensions of *cross-section* and time series, so that the use of panel data regression can be justified. The transformation of monetary variables to natural logarithms also strengthens the robustness of empirical analysis because it improves the statistical properties of the data and maintains consistency between descriptive statistics and econometric models used (Menicucci & Paolucci, 2016).

Regression Results

This subsection presents the results of hypothesis testing based on *Fixed Effect Model estimates*. To be clear and transparent, the empirical findings are summarized in the form of a table and accompanied by a narrative explanation. The table reports the estimation coefficient, t-statistic, and significance level, while the narrative highlights the main results relevant to the proposed hypothesis.

Table 2. Diagnostic Model

Statistics	LONG	ROE
F-statistics	15.15008 (prob. = 0.0000)	4.037648 (Prob. = 0.0000)
R ²	0,668875	0,339993
R ² corrected	0,624725	0,251992

Note: $p < 0.01$, $p < 0.05$, $p < 0.10$.

(Source: Estimation using Fixed Effect Model (EViews))

The estimation results show that ESG performance has a positive and statistically significant effect on *Return on Assets* (ROA). These findings support the H1 Hypothesis, which means that higher ESG performance is related to operational efficiency and better asset utilization (Gangi et al., 2019; Nizam et al., 2019). However, ESG performance does not have a statistically significant effect on *Return on Equity* (ROE), so the H2 Hypothesis is rejected (Servaes & Tamayo, 2013; Broadstock et al., 2021).

On bank-specific variables, total assets were positively and statistically significant in both ROA and ROE, thus supporting the H5 Hypothesis. These results show that larger banks benefit from higher economies of scale and operational efficiency (Menicucci & Paolucci, 2016; Laeven et al., 2016). In contrast, total deposits and total loans have a negative and statistically significant effect on ROA, while their effect on ROE is not significant. Thus, H3 and H4 hypotheses are not supported (Demy anyk & Hasan, 2010; Nguyen & Nguyen, 2020).

In macroeconomic factors, inflation has a negative and significant effect on ROA, which supports the H6 Hypothesis in the ROA model (Bitar et al., 2017). Economic growth has a positive and statistically significant effect on ROA, thus supporting the H7 Hypothesis (Laeven et al., 2016). However, neither inflation nor economic growth have a significant effect on ROE, which suggests that macroeconomic conditions mainly affect asset-based profitability, not equity-based profitability (Menicucci & Paolucci, 2016).

Overall, the results of the hypothesis test show that ESG performance, bank size, and macroeconomic conditions play an important role in determining asset-based profitability, while equity-based profitability is primarily influenced by the internal characteristics of the bank (Gangi et al., 2019; Broadstock et al., 2021).

Discussion

The findings of this study provide important insights into the relationship between ESG performance and bank profitability in ASEAN-5 countries. The positive and significant influence of ESG performance on *Return on Assets* (ROA) suggests that ESG-oriented practices improve banks' operational efficiency and asset utilization. Banks with higher ESG scores tend to implement stronger governance structures, more prudent risk management, and responsible lending policies. This contributes to stable operations and better efficiency in generating returns from its asset base (Weber, 2017; Scholtens & van 't Klooster, 2019).

These results are in line with *Stakeholder Theory*, which emphasizes that companies that pay attention to the interests of many stakeholders, such as regulators, savers, customers, and society, are more likely to achieve sustainable financial outcomes (Donaldson & Preston, 1995). In the banking sector, ESG performance strengthens trust and credibility, lowers reputational risks, and improves internal control mechanisms. These factors together underpin asset-based profitability, especially in emerging markets where the quality of institutions and the effectiveness of governance vary between countries (Orlitzky et al., 2003; Gangi et al., 2019).

However, ESG performance does not have a statistically significant effect on *Return on Equity* (ROE). These findings suggest that the benefits of ESG integration are not directly reflected in shareholder returns. From the perspective of *Ethical Banking Theory*, ESG initiatives often require large initial investments, such as compliance costs, governance restructuring, and sustainability programs. In the short term, these costs can offset the potential for increased equity returns. In addition, capital markets in emerging countries may not yet fully incorporate ESG performance into a company's assessment, making the ESG–ROE relationship insignificant. These results are in line with previous empirical studies that have found diverse or inconclusive influences of ESG on equity-based profitability (Servaes & Tamayo, 2013; Broadstock et al., 2021).

The positive influence of total assets on ROA and ROE confirms the importance of economies of scale in the banking sector. Larger banks benefit from diversification, operational efficiency, and wider access to funding sources, thus being able to generate higher profits (Menicucci & Paolucci, 2016; Laeven et al., 2016). These findings support the argument that bank size remains a key determinant of profitability, even after ESG performance and macroeconomic conditions are taken into account.

In contrast, total deposits and total credit have a negative and statistically significant effect on ROA. These results suggest that aggressive expansion in fundraise and credit disbursement does not necessarily result in higher operational profitability. Without effective risk management and cost control, rapid growth of deposits and credit can increase operating expenses and credit risk, thereby lowering asset efficiency (Demyanyk & Hasan, 2010). These findings confirm the importance of prudent balance sheet management and support the view that growth-oriented strategies should be aligned with good governance practices to increase profitability.

Macroeconomic conditions also play an important role in shaping a bank's profitability. Inflation has a negative effect on ROA, which reflects increased operating costs and increased credit risk during times of inflation (Bitar et al., 2017). Conversely, economic growth has a positive and significant effect on ROA, which suggests that good economic conditions increase debtors' ability to repay obligations and drive demand for banking services (Laeven et al., 2016). The absence of a significant macroeconomic influence on ROE suggests that shareholder returns are more influenced by banks' internal policies and capital structure decisions than short-term macroeconomic fluctuations (Menicucci & Paolucci, 2016).

Overall, this discussion confirms that ESG performance functions as a strategic asset that improves operational efficiency, not a direct shareholder return. In the context of the ASEAN-5 banking system, where ESG frameworks and market maturity differ between countries, the integration of ethical and sustainability considerations seems to strengthen asset-based profitability as well as long-term stability (Weber, 2017; Scholtens & van 't Klooster, 2019). These findings underscore the relevance of ESG performance as an integral part of banking strategies in emerging markets, particularly in supporting sustainable and resilient financial institutions (Nizam et al., 2019).

Theoretical Implications

This research contributes to the sustainable finance literature by presenting empirical evidence on the relationship between ESG performance and bank profitability in emerging markets, particularly in the ASEAN-5 region.

The findings of the study support *the stakeholder theory*, which states that companies that pay attention to the interests of many stakeholders tend to achieve better operational performance. This is reflected in the positive and significant influence of ESG performance on *Return on Assets* (ROA).

However, the insignificant relationship between ESG performance and *Return on Equity* (ROE) suggests that ESG benefits have not been directly captured in shareholder returns. These findings complement previous studies that have stated that ESG investing is long-term and takes time before it affects equity-based performance.

In addition, the study expands the literature by including bank-specific variables as well as macroeconomic variables in the panel data framework, thereby providing a more comprehensive understanding of the ESG-profitability relationship in the banking sector.

Practical Implications

The findings of this study provide several important implications for banking practitioners, regulators, and investors.

For banking institutions, the positive impact of ESG performance on asset-based profitability suggests that ESG integration needs to be viewed as a strategic component of operational management, not just a regulatory obligation. Banks are encouraged to strengthen sustainability-oriented governance structures, risk management practices, and lending policies to improve efficiency and long-term performance.

For regulators and policymakers, the results show that encouraging the implementation of ESG in the banking sector can improve financial system stability. Policies that encourage ESG disclosure, transparency, and standardization of reporting can help improve bank performance while lowering systemic risks.

For investors, the insignificant relationship between ESG performance and ROE suggests that ESG should be viewed as a long-term investment strategy, rather than a short-term yield driver. Investors are encouraged to treat ESG performance as an indicator of sustainability and risk management, rather than as a source of instant financial gain.

Policy Implications

The findings of this study provide several important policy implications for banking institutions, regulators, and policymakers in ASEAN-5 countries.

First, the positive influence of ESG performance on asset-based profitability (ROA) suggests that ESG integration needs to be viewed as a strategic component in the bank's operational management, not just a compliance requirement. Banks are encouraged to strengthen sustainability-oriented governance frameworks, risk management practices, and lending policies to improve operational efficiency and long-term financial stability.

Second, for regulators and supervisory authorities, research results show that encouraging the adoption of ESG in the banking sector can support the resilience of the financial system. Regulatory frameworks that encourage transparency, standardized ESG disclosure, and integrating ESG considerations into risk assessments can help improve banks' operational performance while lowering systemic risks. In emerging markets where the quality of institutions differs across countries, regulatory guidance on ESG practices can play an important role in aligning sustainability standards in the banking sector.

Third, the insignificant relationship between ESG performance and ROE suggests that capital markets in ASEAN-5 may not yet fully incorporate ESG performance into banks' assessments. Policymakers may consider increasing investor awareness and improving ESG-related disclosure so that long-term sustainability efforts are appropriately recognized by market participants. Over time, this can help align ESG performance with value creation for shareholders.

CONCLUSION

This study examines the influence of *Environmental, Social, and Governance* (ESG) performance on bank profitability in ASEAN-5 countries using balanced panel data for the period 2015–2024. By applying the *Fixed Effect Model* and incorporating bank- and macroeconomic-specific control variables,

this study presents empirical evidence on how ESG practices affect various dimensions of bank profitability.

The results show that ESG performance has a positive and statistically significant effect on asset-based profitability as measured by *Return on Assets* (ROA). These findings show that ESG-oriented practices improve bank operational efficiency through better governance, prudent risk management, and responsible lending policies. However, ESG performance does not have a significant effect on equity-based profitability as measured by *Return on Equity* (ROE), which suggests that the financial benefits of ESG integration are not directly reflected in shareholder returns.

In addition, the size of the proxied bank with total assets had a positive effect on ROA and ROE, which confirmed the existence of economies of scale in the banking sector. In contrast, the rapid expansion of deposits and credit was related to lower asset-based profitability, thus underscoring the importance of prudent balance sheet management. Macroeconomic conditions also played a role: economic growth supported bank profitability, while inflation depressed operational performance.

Overall, these findings suggest that ESG performance serves as a strategic asset that strengthens the bank's operational efficiency and long-term stability, rather than a short-term return for shareholders. For banking institutions in ASEAN-5, integrating ESG considerations into core business strategies can improve sustainable profitability and resilience, particularly in emerging market environments where the quality of governance and institutional frameworks are still evolving.

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