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The Determinant of Firm Value in Asean Market: Esg Initiatives as Intervening Variable

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Abstract

This study investigates the impact of leverage, cash flow, and firm size on firm value in the ASEAN market, with Environmental, Social, and Governance (ESG) initiatives acting as a mediating variable. Drawing on stakeholder and signaling theories, the study develops a conceptual framework that integrates both financial and non-financial factors in determining firm value. Using panel data from 50 non-financial companies listed on ASEAN stock exchanges between 2019 and 2023, the study employs Structural Equation Modeling using Partial Least Squares (SEM-PLS) to analyze both direct and indirect relationships. The results show that leverage, cash flow, and firm size all have significant and positive effects on firm value. Among these, firm size exerts the strongest direct influence. In addition to their direct effects, these variables also significantly affect ESG initiatives. ESG initiatives themselves have a significant positive impact on firm value, reinforcing their strategic importance in enhancing corporate reputation and stakeholder trust. Importantly, ESG initiatives are found to mediate the relationship between financial indicators and firm value, with firm size again showing the strongest indirect effect through ESG. These findings suggest that ESG practices not only complement financial performance but also enhance the value-creation process in firms operating within the ASEAN region. This study contributes to the growing body of literature on sustainable finance by providing empirical evidence of the mediating role of ESG initiatives in linking financial strategy to firm value. The results have practical implications for corporate managers and policymakers aiming to align financial and sustainability goals.

Keywords: ESG Initiatives, Firm Value, Leverage, Cash Flow, Firm Size, ASEAN Market, Sustainable Finance.

Introduction

The ASEAN market has emerged as one of the most dynamic and rapidly expanding economic regions in the world, attracting significant global investment and fostering greater financial integration among its member nations [1]. As businesses in the region continue to scale, understanding the determinants of firm value becomes increasingly crucial for investors, corporate executives, and policymakers. Among the many financial factors that influence firm valuation, leverage, net cash flow, and firm size stand out as key indicators that can shape a company's financial health and long-term growth potential [2], [3], [4]. Leverage, which refers to the proportion of debt a firm uses to finance its operations, can enhance returns when managed effectively but also heightens financial risk when debt levels become unsustainable. Net cash flow, a measure of a company's liquidity and operational efficiency, is another fundamental determinant of firm value, as it indicates the ability to generate surplus funds that can be reinvested for expansion, debt servicing, or dividend distribution. Meanwhile, firm size plays a

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pivotal role in influencing market perception, operational stability, and access to financial resources. Larger firms often benefit from economies of scale, a stronger market presence, and greater investor confidence, all of which contribute to enhanced firm valuation.

While these financial factors have traditionally been regarded as primary drivers of firm value, recent shifts in global investment trends highlight the growing importance of non-financial considerations, particularly Environmental, Social, and Governance (ESG) initiatives [5], [6], [7]. ESG factors reflect a company's commitment to sustainable business practices, ethical governance, and corporate social responsibility. In an era where investors and stakeholders demand greater transparency and accountability, firms that actively integrate ESG initiatives are increasingly viewed as more resilient and sustainable in the long run. Research has shown that companies with strong ESG performance tend to attract more investment, mitigate regulatory risks, and enhance their reputation among consumers and business partners. As such, ESG initiatives can serve as an intervening variable that influences the extent to which leverage, net cash flow, and firm size contribute to firm value. A firm that effectively manages its debt while incorporating ESG principles may experience stronger market confidence than a leveraged firm that neglects sustainability. Similarly, companies with robust net cash flows that also allocate resources to ESG activities may gain a competitive edge, attracting investors who prioritize both financial and ethical considerations [7], [8], [9], [10].

The ASEAN market presents a particularly compelling case for studying the intersection of financial determinants and ESG factors due to its diverse economic structures and varying levels of regulatory frameworks [4], [11], [12]. While countries like Singapore and Malaysia have made significant progress in integrating ESG principles into corporate governance and investment strategies, other ASEAN nations are still in the early stages of ESG adoption. The region's economic diversity—ranging from highly developed financial hubs to emerging markets with evolving corporate policies—offers an ideal setting to examine how firms balance financial growth with sustainability initiatives. Given that ASEAN economies are heavily reliant on industries such as manufacturing, energy, and agriculture, many firms face increasing scrutiny regarding their environmental impact, labor practices, and governance structures. The implementation of ESG frameworks in these industries not only aligns businesses with global sustainability trends but also provides potential financial benefits by improving risk management and long-term resilience [1], [2], [3], [12].

Moreover, as global capital markets shift toward sustainable investing, ASEAN firms that proactively embrace ESG initiatives are more likely to attract foreign direct investment (FDI) and institutional capital. Large multinational investors, particularly those from regions with stringent ESG regulations such as the European Union and North America, are increasingly integrating ESG criteria into their investment decisions [4], [11], [12]. This shift places additional pressure on ASEAN firms to improve their ESG performance, not only to comply with international investment standards but also to enhance their overall market valuation. For instance, companies that prioritize environmental sustainability by adopting green energy solutions, reducing carbon emissions, and ensuring resource efficiency are more likely to appeal to environmentally conscious investors. Similarly, firms that emphasize strong governance frameworks, ethical leadership, and employee well-being foster trust among shareholders and stakeholders, further enhancing firm value. In this context, ESG initiatives do not merely act as an auxiliary strategy but serve as an essential factor that can mediate the impact of financial variables on firm valuation.

Given this backdrop, this study aims to explore the effect of leverage, net cash flow, and firm size on firm value in the ASEAN market while examining the role of ESG initiatives as an intervening variable. By conducting a comprehensive analysis, this research seeks to determine whether firms that actively integrate ESG principles experience higher valuations compared to those that focus solely on traditional financial indicators. The study will employ empirical data from ASEAN-listed companies to assess the extent to which ESG factors mediate the relationship between financial variables and firm performance. Understanding these dynamics will provide valuable insights for corporate decision-makers who seek to optimize their financial strategies while ensuring compliance with evolving sustainability standards. Additionally, the findings will offer practical implications for investors who are increasingly aligning their portfolios with ESG criteria, allowing them to make more informed decisions when allocating capital in the ASEAN region.

As the ASEAN market continues to evolve, the integration of ESG initiatives alongside traditional financial metrics is becoming an essential component of corporate strategy. Firms that recognize the importance of ESG and align their business models accordingly are more likely to achieve long-term sustainability and enhanced valuation. This study contributes to the ongoing discourse on ESG integration by providing empirical evidence on its role in mediating financial determinants of firm value. The insights gained will not only benefit corporations looking to strengthen their market position but also assist policymakers in formulating regulatory frameworks that encourage responsible business practices. Ultimately, by striking a balance between financial performance and ESG considerations, firms in the ASEAN region can create long-term value for stakeholders while contributing to sustainable economic growth.

Literature Review and the Hypothesis Development

The Effect of Leverage, Net Cash Flow and Firm Size on Firm Value

Leverage, which reflects the extent to which a firm relies on debt financing, has long been recognized as a crucial determinant of firm value. Theoretical foundations, such as Modigliani-Miller Theory [13], [14] capital structure theory, suggest that firms can enhance their value by utilizing debt due to the tax shield effect, where interest payments on debt reduce taxable income. Empirical research has consistently examined this relationship, with several studies confirming a positive effect of leverage on firm value when managed optimally. It was found that leverage positively impacts firm value, particularly when firms maintain strong financial quality [15], [16], [17], [18]. Similarly, firms that effectively balance debt and equity tend to achieve higher market valuations when considering managerial ownership, profitability, and firm size alongside leverage [19]. This argument was further reinforced by evidence from manufacturing firms listed on the Indonesia Stock Exchange, which showed that leverage significantly enhances firm value, particularly when combined with sound financial strategies such as effective dividend policies [16]. Supporting evidence also shows that leverage contributes to greater firm value when firms strategically manage their dividend distributions, ensuring a balance between shareholder returns and debt obligations [20].

More recent studies continue to highlight the importance of leverage in determining firm valuation. Research on Jordan's industrial sector found that leverage, along with firm size and asset structure, has a significant positive influence on firm value [15]. In a study of firms listed on the Nigerian Stock Exchange, it was confirmed that optimal leverage levels contribute positively to firm valuation, emphasizing the role of effective debt management in financial performance [17]. Additional support comes from findings that show a positive interaction

between leverage, profitability, and firm size, which enhances firm value [21]. Likewise, Indonesian firms with well-managed debt structures were found to achieve superior market performance [22]. The most recent research emphasized that leverage remains a key determinant of firm value, particularly when firms adopt sound investment decisions and financial policies [23]. Given these empirical findings, the following hypothesis is proposed:

H1: The Leverage has a positive and significant effect on firm value

Cash flow plays a crucial role in determining firm value, as it reflects a company's ability to generate liquidity, sustain operations, and finance growth opportunities. It has been identified as a key determinant of financial stability and risk management in the context of corporate social responsibility (CSR) and firm performance [24]. This perspective is supported by [25], who demonstrated that hedging strategies improve cash flow stability, which in turn positively affects firm value. Further research by [26] found that firms with strong cash flow positions tend to experience higher valuation, particularly when their dividend policies effectively distribute earnings to shareholders. Besides, [27] reinforced this finding by showing that firms with larger cash flow reserves are more attractive to investors due to their financial flexibility and reduced risk. In line with this, [28] presented evidence from Taiwan showing that companies with consistent and positive cash flow statements typically enjoy higher market valuation, as investors view strong cash flow as a sign of operational efficiency and financial health.

More recent studies reinforce the argument that cash flow significantly contributes to firm value. The connection between cash flow, CSR disclosure, and firm value, revealing that firms with solid cash flow performance are more likely to invest in CSR efforts, which in turn boosts their valuation [29]. In manufacturing firms, cash flow directly influences firm value, emphasizing the need for strong liquidity management and strategic reinvestment [30]. Likewise, [31] concluded that higher free cash flow strengthens financial stability and creates more opportunities for investment, ultimately increasing firm value. These findings collectively suggest that cash flow is a vital driver of firm value, empowering firms to support expansion, meet obligations, and build investor trust. Based on these empirical insights, the following hypothesis is proposed:

H2: The Net Cash Flow has a positive and significant effect on firm value

Firm size has been widely recognized as a key determinant of firm value, as larger firms tend to have greater financial stability, access to capital, and market influence. Early studies identified firm size as a significant factor influencing firm value, particularly when considered alongside managerial ownership, financial leverage, and investment opportunities [19]. Further exploration into this relationship found that firm size positively contributes to firm value, as larger firms typically enjoy economies of scale, higher productivity, and stronger investor confidence [32]. It has also been demonstrated that firm size enhances firm value through its impact on capital structure, suggesting that larger firms have a greater capacity to manage financial risks and optimize their capital allocation [33]. More recent studies reinforced these findings by showing that firm size, in combination with liquidity and profitability, significantly improves firm valuation, particularly in the financial service and industrial sectors [34], [35]. Empirical evidence from the industrial sector in Jordan further indicated that firm size positively influences firm value by enhancing operational efficiency and financial flexibility [15]. Similarly, it was confirmed that firm size, alongside financial ratios such as return on assets and debt-to-asset ratio, contributes to higher firm valuation, emphasizing that larger firms benefit from stronger market positioning and investor trust [36].

More recent studies continue to validate the positive effect of firm size on firm value. An analysis of Indonesian firms found that firm size significantly enhances firm valuation by reducing financial uncertainty and increasing firm credibility among investors [21]. This was further supported by research demonstrating that firm size, in combination with leverage and profitability, plays a crucial role in determining firm value [22]. The most recent findings reaffirmed that larger firms tend to achieve higher valuation due to their ability to attract investment, maintain operational stability, and sustain long-term growth [23]. These findings suggest that firm size remains a critical factor in corporate valuation, as it provides firms with the necessary resources to navigate financial challenges and capitalize on market opportunities. Based on these empirical insights, the following hypothesis is proposed:

H3: The Net Cash Flow has a positive and significant effect on firm value

The Effect of Leverage, Net Cash Flow and Firm Size on ESG Initiatives

Leverage has increasingly been linked to corporate ESG (Environmental, Social, and Governance) behavior, particularly as firms seek to manage reputational risk, enhance transparency, and meet stakeholder expectations in a highly scrutinized financial environment. Firms with higher levels of financial leverage often experience greater pressure from lenders, investors, and regulators to operate more transparently and responsibly, which can lead to a greater commitment to ESG initiatives. According to [37], ESG performance significantly influences capital structure decisions and the speed of adjustment toward target leverage, suggesting that firms with higher leverage are more likely to engage in ESG practices as a means of maintaining legitimacy and reducing perceived financial risk. Similarly, [38] found that fulfilling ESG responsibilities plays a mitigating role in corporate leverage manipulation, implying that firms with higher debt obligations may adopt ESG practices to enhance credibility and regulatory compliance.

Moreover, the relationship between leverage and ESG disclosure is further supported by empirical studies conducted in emerging markets. For instance, [39] emphasized that leverage is a significant determinant of ESG reporting among Asian firms, indicating that firms may adopt ESG frameworks to address the concerns of debt holders and institutional investors. Besides, [40] also revealed that financial leverage has a meaningful impact on sustainable growth and market performance, reinforcing the idea that debt-burdened firms may strategically use ESG commitments to improve their market image and long-term viability. Furthermore, [41] and [42] found that firm-specific characteristics, including capital structure, are critical drivers of ESG disclosures, as companies aim to align their operations with global sustainability standards and gain competitive advantage. Collectively, these findings suggest that leverage not only influences a firm's financial structure but also acts as a catalyst for greater ESG engagement. Based on this empirical evidence, the following hypothesis is proposed:

H4: Leverage has a positive effect on ESG initiatives.

Cash flow plays a vital role in enabling firms to implement and sustain Environmental, Social, and Governance (ESG) initiatives, as it provides the financial flexibility needed to invest in sustainability-oriented strategies. Companies with strong and stable cash flows are better positioned to allocate resources toward ESG efforts such as environmental technology upgrades, employee welfare programs, and improved corporate governance structures. Sustainable finance practices, which include ESG commitments, are more effectively executed by firms with healthy cash flow, as they can afford to prioritize long-term societal goals alongside financial returns

[43]. Similarly, [7] found that positive ESG-related news is often associated with expectations of higher future cash flows, highlighting a feedback loop where firms with stronger cash flow signals are also more likely to maintain or enhance ESG efforts to protect and grow their valuation.

The positive influence of cash flow on ESG engagement is also supported by evidence from various financial markets. The study by [8] demonstrated that pro-environmental firms, which tend to attract higher future cash flows, often engage in sustainable advertising and other ESG practices that reinforce their market position and stakeholder trust. In a related study, [9] showed that fund performance and investor cash flows are significantly influenced by the ESG level of firms, suggesting that firms with strong liquidity are more likely to attract investor interest when they actively pursue ESG objectives. The study by [44] also found that firms with higher levels of ESG disclosure manage cash holdings more efficiently, indicating that cash-rich firms can invest in ESG without compromising liquidity. Furthermore, [45] emphasized the reputational risk mitigation value of ESG practices, which is especially crucial for firms that manage large cash reserves and want to safeguard future payouts and market confidence. Collectively, these studies support the notion that firms with robust cash flow are more likely to engage in ESG activities to preserve stakeholder value and enhance long-term performance. Based on this evidence, the following hypothesis is proposed:

H5: Cash flow has a positive effect on ESG initiatives.

Firm size has consistently been identified as a key determinant in the adoption and quality of ESG initiatives, with larger firms generally exhibiting more robust ESG performance. This is primarily due to their greater access to financial and human resources, higher visibility to regulators and stakeholders, and increased scrutiny from investors and the public. The study by [46] found that larger companies in Indonesia were more likely to disclose ESG-related information and improve their financial performance through sustainable practices. Similarly, [47] demonstrated a significant positive relationship between firm size and corporate social responsibility (CSR), highlighting that larger firms are more capable of integrating ESG principles into their core business strategies. In addition, [48] provided evidence that firm size positively influences ESG performance, suggesting that larger firms have more structured governance systems and better capabilities for tracking and reporting ESG metrics.

The positive effect of firm size on ESG initiatives is further supported by findings across diverse global contexts. The study by [49] observed that in the MENA region, larger firms not only engage more deeply with ESG but also experience enhanced financial outcomes as a result. Besides, [50] found that firm size moderates the relationship between ESG performance and corporate survival, emphasizing that size enables greater resilience through sustainable strategies. Research by [51] in the banking sector also confirmed that larger institutions are less exposed to ESG risk, implying more proactive ESG management. Furthermore, [52] and [53] discussed the size bias in ESG scores, indicating that larger firms tend to receive higher ratings due to their superior disclosure capabilities and structured sustainability programs. Furthermore, [54] also highlighted how this bias affects ESG evaluations, particularly for small-cap investors. Overall, these findings suggest that firm size significantly facilitates ESG engagement through increased capacity, institutional pressure, and stakeholder expectations. Based on this evidence, the following hypothesis is proposed:

H6: Firm size has a positive effect on ESG initiatives.

The Effect of ESG Initiatives on Firm Value

ESG initiatives have gained increasing attention in the corporate world due to their ability to enhance long-term firm value by improving reputation, stakeholder trust, operational efficiency, and access to capital. Numerous empirical studies have found that companies with strong ESG performance tend to experience higher market valuation and better financial performance. For instance, [55] demonstrated that ESG performance positively influences firm value in the Korean market, highlighting the growing importance of sustainability in investor decision-making. Similarly, [56] provided evidence from Egypt showing that environmental, social, and governance disclosures have a significant and positive effect on firm value, as they reduce information asymmetry and promote transparency. Besides, [57] confirmed this relationship in the Indonesian context, finding that better ESG performance improves both operational and market performance. Moreover, [58] found that firms with ESG certifications achieve higher valuation due to the added credibility and investor appeal associated with verified sustainable practices.

Recent research has further reinforced the link between ESG initiatives and firm value. The study by [5] used market data to show that ESG performance significantly improves profitability and firm value, while [6] demonstrated through a cross-lagged panel analysis that ESG scores are positively related to firm value over time in the Indian energy sector. Besides, [7] highlighted the role of ESG-related news in shaping market expectations and influencing future cash flows, which ultimately impact firm valuation. Moreover, [59] also emphasized that companies with stronger ESG commitments are more resilient, attract higher investor interest, and generate better market performance. Furthermore, [60] found that financial performance acts as a mediator between ESG efforts and firm value, indicating that ESG initiatives improve financial fundamentals, which then enhance valuation. ESG disclosure positively affects firm value through improved access to debt financing, particularly in the REIT sector [61]. More recently, [45] identified that ESG reputation serves to protect firm value by reducing payout risk and enhancing market perception, while [62] revealed that ESG disclosure, alongside financial ratios, plays a crucial role in driving firm valuation. Collectively, these findings consistently show that ESG initiatives are not merely acts of corporate responsibility but strategic tools for enhancing long-term firm value. Based on this evidence, the following hypothesis is proposed:

H7: ESG initiatives have a positive effect on firm value.

The Effect of Leverage, Net Cash Flow and Firm Size on Firm Value Mediated by ESG Initiatives

Environmental, Social, and Governance (ESG) initiatives have emerged as a strategic channel through which firms can enhance their long-term value, particularly when viewed as a mediating factor between traditional financial indicators and firm performance. In this context, leverage—a firm's use of debt to finance operations—may influence not only firm value directly but also indirectly by prompting higher ESG engagement. Firms with greater financial leverage are often under pressure to maintain credibility with investors and lenders, which can encourage stronger ESG performance as a reputational and risk management tool [37], [38]. Moreover, [39] also highlight that leveraged firms in Asia are more inclined to adopt ESG disclosures to satisfy the expectations of creditors and institutional stakeholders. In this way, ESG initiatives serve to bridge the financial risk posed by leverage and the firm's efforts to demonstrate long-term value, thereby enhancing investor trust. Based on this rationale, the following hypothesis is proposed:

H8A: Leverage positively affects firm value through the mediation of ESG initiatives.

Similarly, cash flow—reflecting a firm’s operational liquidity—has a critical role in supporting ESG engagement, which in turn boosts firm value. Firms with strong cash flow have greater capacity to invest in ESG-related programs such as emissions reduction, community engagement, and corporate governance improvements. These activities not only reflect responsible business practices but also signal stability and growth potential to the market. Several studies have affirmed this relationship; for example, [8] showed that pro-environmental firms with healthy cash flow gain increased future earnings and valuation. Additionally, [44] found that firms with ample liquidity are more likely to engage in ESG disclosures and manage cash responsibly, enhancing stakeholder confidence. Moreover, [7], and [63] linked ESG news with expectations of improved future cash flow, underscoring the cyclical relationship between financial strength and sustainability. Therefore, the following hypothesis is proposed:

H8B: Cash flow positively affects firm value through the mediation of ESG initiatives.

Firm size also plays a significant role in shaping ESG engagement and, ultimately, firm value. Larger firms typically face more external pressure from regulators, investors, and the public to uphold ESG standards and are more capable of doing so due to their abundant resources and infrastructure. This dynamic has been supported by several studies; for instance, [49] found that larger firms in the MENA region experienced greater ESG-driven improvements in financial performance, while [50] emphasized that firm size strengthens the ESG–survival relationship. Additionally, [46] noted that firm size enhances ESG disclosures, which can translate to improved performance metrics. By mediating the relationship between firm size and firm value, ESG initiatives reflect the firm's ability to meet growing sustainability demands, improve transparency, and solidify long-term market positioning. Thus, the following hypothesis is proposed:

H8C: Firm size positively affects firm value through the mediation of ESG initiatives.

Taken together, these hypotheses highlight the multifaceted role ESG initiatives play in converting financial strength—whether through leverage, liquidity, or scale—into sustained firm value. ESG practices not only help mitigate the risks associated with high leverage but also amplify the benefits of robust cash flow and organizational scale. As investors increasingly reward sustainable and transparent operations, ESG adoption becomes a vital mechanism through which firms can leverage their internal financial attributes to drive valuation. These relationships are especially relevant in emerging markets like ASEAN, where ESG practices are gaining momentum and becoming increasingly linked with corporate reputation and access to capital. Based on the hypothesis development the conceptual framework figured out in Figure 1.

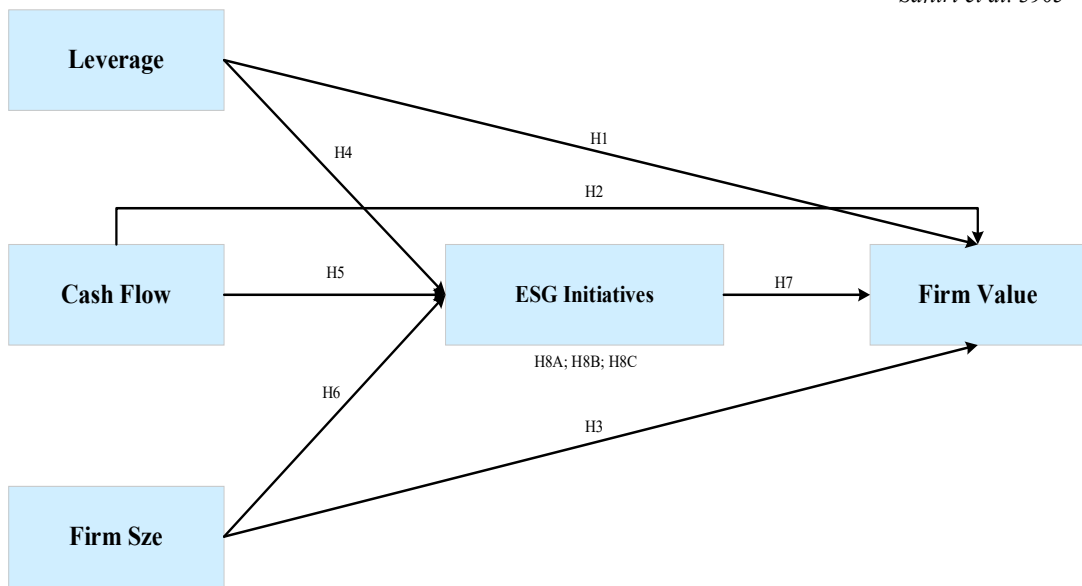


Figure 1: Conceptual Framework

The conceptual framework illustrated in the diagram presents a comprehensive model to examine the direct and indirect effects of leverage, cash flow, and firm size on firm value, with ESG initiatives acting as an intervening (mediating) variable. The direct relationships are represented by hypotheses H1 to H3, which propose that each of the three financial indicators—leverage (H1), cash flow (H2), and firm size (H3)—positively influences firm value. These hypotheses are grounded in prior financial theories and empirical findings that suggest stronger financial positioning enables firms to enhance their performance, market standing, and investor confidence. The framework then introduces hypotheses H4, H5, and H6 to explore the effect of these financial indicators on ESG initiatives. It theorizes that firms with more resources (from cash flow or size) or those under more pressure (due to leverage) are more inclined to adopt and implement ESG practices.

Central to the framework is H7, which posits that ESG initiatives positively affect firm value, aligning with the broader literature that sees ESG performance as a value-enhancing factor due to its role in reputation building, risk mitigation, and improved stakeholder relations. The indirect paths—H8A, H8B, and H8C—represent the mediating role of ESG initiatives, suggesting that leverage, cash flow, and firm size affect firm value not only directly but also indirectly through ESG. These mediated hypotheses aim to capture the strategic importance of ESG as a bridge between financial capacity and long-term sustainable performance. This integrative model reflects how firms in the ASEAN market can leverage internal financial strengths to enhance value through proactive ESG engagement, responding to growing global expectations for responsible and sustainable business practices.

Data and Research Methodology

Research Design and Description of the Data

This study employs a quantitative research design to investigate the mediating role of ESG initiatives in the relationship between financial indicators—leverage, net cash flow, and firm size—and firm value in the ASEAN context. These companies were selected using purposive

sampling, with selection criteria including: Availability of annual reports and sustainability disclosures; Completeness of financial statements across all five years; and- Inclusion of ESG-related data that allowed for quantitative assessment.

The primary sources of data include: Annual financial reports; Sustainability or ESG reports; and Public disclosures available through ASEAN stock exchange portals. These data were obtained from publicly accessible company filings and regulatory submissions, ensuring reliability and transparency in the research process. The dataset used in this research comprises panel data collected from 50 non-financial and banking companies listed on ASEAN stock exchanges, covering the period from 2019 to 2023.

Definition and Operation of Variables

The dataset includes both financial variables and non-financial (ESG-related) variables: Leverage: measured as the debt-to-equity Ratio; Net Cash Flow: derived from cash flow from operating activities; Firm Size: represented by the natural logarithm of total assets; ESG Initiatives: quantified using a composite ESG disclosure score derived from sustainability reports, following a content analysis approach;- Firm Value: proxied by Tobin's Q ratio (market value of firm assets divided by their replacement cost). The Definition and operation of variable is shown in Table 1.

| Variable | Definition | Operational Definition | Formula |
|-----------------|--|---|--|
| Leverage | The extent to which a firm uses debt to finance its operations | Measured as the debt-to-equity ratio | Total Debt / Total Equity |
| Net Cash Flow | Cash flow from operating activities representing liquidity and operational performance | Measured as net cash flow from operations (in millions) | Net Cash Flow from Operating Activities |
| Firm Size | Total assets representing the scale of the firm | Measured as the natural logarithm of total assets | Ln (Total Assets) |
| ESG Initiatives | Level of corporate engagement in environmental, social, and governance practices | Composite score from ESG disclosures based on GRI framework | Sum of ESG Indicators Score |
| Firm Value | Market valuation of a firm relative to the replacement cost of its assets | Measured using Tobin's Q ratio | (Market Value of Equity + Book Value of Debt)/Book Value of Assets |

Table 1. Definition and Operationalization of Variables

The Dataset

The dataset for this study was constructed using publicly available secondary data extracted from financial statements and sustainability reports of ASEAN-listed firms between 2019 and 2023. The data underwent several pre-processing steps: Standardization: Financial ratios and scores were standardized to ensure comparability across firms and years. Missing Data Handling: firms

with incomplete data for any of the five years were excluded to preserve the integrity of the data structure. Outlier Detection: Extreme outliers in leverage and cash flow were winsorized at the 1st and 99th percentiles to reduce skewness without compromising analytical rigor. ESG Scoring: A manual scoring system was applied to ESG disclosures based on internationally recognized indicators, resulting in a numerical representation of ESG engagement.

Data Analysis

Structural Equation Modeling using Partial Least Squares (SEM-PLS) is used for hypothesis testing. This method is chosen for its ability to manage complex models involving multiple latent constructs and for its flexibility in dealing with non-normally distributed data. SEM-PLS analysis is conducted in two stages: - Measurement Model Evaluation: to confirm reliability and validity of the constructs. - Structural Model Assessment: to test direct and indirect relationships among variables, especially the mediating role of ESG initiatives. All hypotheses are evaluated at a 5% significance level, with bootstrapping (5,000 resamples) applied to ensure robust estimation of standard errors and confidence intervals.

Results and Discussion

Assessment of Structural Model

The hypothesis testing in this study was conducted using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with SmartPLS software, which is widely used for analyzing complex relationships between latent variables in both exploratory and confirmatory research. SEM-PLS was chosen due to its robustness in handling small to medium sample sizes, its ability to model relationships without requiring strict normality assumptions, and its capability to estimate both direct and indirect effects simultaneously. The bootstrapping technique was employed to assess the significance of path coefficients, ensuring reliable statistical inference. The results provided insights into the direct effects of leverage, net cash flow, and firm size on firm value, as well as the mediating role of ESG Initiatives (ESG). This methodological approach allowed for a comprehensive evaluation of the research hypotheses while ensuring statistical rigor in analyzing the determinants of firm value within the ASEAN corporate landscape. The assessment of structural model – bootstrapping is shown in Figure 2.

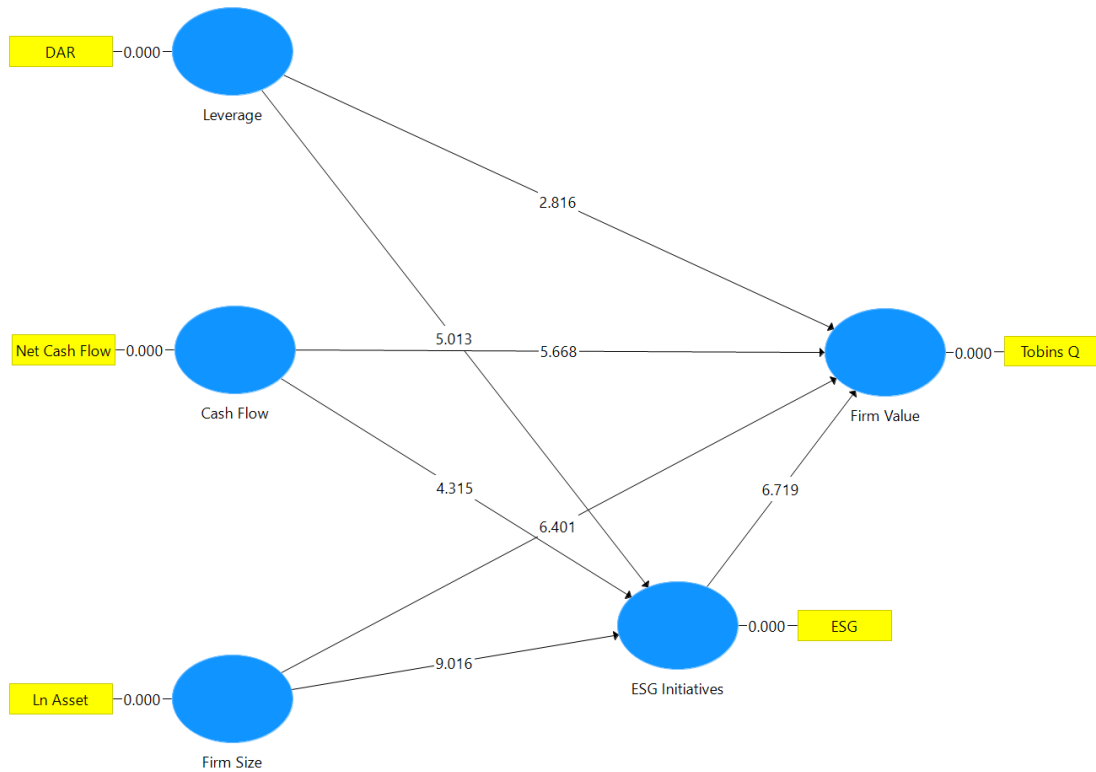


Figure 2: The Assessment of Structural Model – Bootstrapping Technic

Assessment of Direct Effect

In SmartPLS, the assessment of direct and indirect effects is crucial to understanding the relationships between variables in a Structural Equation Modeling-Partial Least Squares (SEM-PLS) framework. “Direct Effects refer to the impact of an independent variable (exogenous variable) on a dependent variable (endogenous variable) without any mediating variable. This is measured using path coefficients, T-statistics, and P-values, which indicate the strength and significance of these relationships. The assessment of direct effect is shown in Table 2.

| Direct Effect | Beta (β) | Std Dev | T Statistics | P Values |
|-------------------------------|------------------|---------|--------------|----------|
| Leverage -> Firm Value | 0.119 | 0.042 | 2.816 | 0.005 |
| Cash Flow -> Firm Value | 0.252 | 0.045 | 5.668 | 0.000 |
| Firm Size -> Firm Value | 0.305 | 0.048 | 6.401 | 0.000 |
| Leverage -> ESG Initiatives | 0.280 | 0.056 | 5.013 | 0.000 |
| Cash Flow -> ESG Initiatives | 0.220 | 0.051 | 4.315 | 0.000 |
| Firm Size -> ESG Initiatives | 0.422 | 0.047 | 9.016 | 0.000 |
| ESG Initiatives -> Firm Value | 0.338 | 0.050 | 6.719 | 0.000 |

Table 2: The Assessment of Direct Effect

The results in the table 1 provide insights into the direct effects of leverage, cash flow, and firm size on firm value, as well as their influence on ESG initiatives. The findings indicate that leverage has a positive and statistically significant effect on firm value ($\beta = 0.119$, $p = 0.005$), suggesting that firms with higher leverage experience a modest increase in firm value, though the effect size is relatively small. Cash flow has a stronger effect on firm value ($\beta = 0.252$, $p = 0.000$), implying that firms with higher net cash flow tend to be more valuable, likely due to increased financial stability and reinvestment capacity. Firm size has the most significant direct impact on firm value ($\beta = 0.305$, $p = 0.000$), highlighting that larger firms benefit from economies of scale, greater investor confidence, and enhanced market positioning. These results indicate that while leverage contributes to firm value, cash flow and firm size play more dominant roles in determining a firm's market valuation.

Beyond their direct effects on firm value, leverage, cash flow, and firm size also influence ESG initiatives, which in turn impact firm value. Leverage positively affects ESG initiatives ($\beta = 0.280$, $p = 0.000$), suggesting that firms with higher debt levels may adopt ESG practices to improve their reputation and stakeholder trust. Cash flow also enhances ESG initiatives ($\beta = 0.220$, $p = 0.000$), indicating that firms with greater liquidity have more resources to invest in sustainability efforts. Notably, firm size has the strongest effect on ESG initiatives ($\beta = 0.422$, $p = 0.000$), reinforcing the idea that larger firms are more likely to integrate ESG practices due to greater regulatory scrutiny and stakeholder expectations. Importantly, ESG initiatives themselves significantly contribute to firm value ($\beta = 0.338$, $p = 0.000$), demonstrating that firms that actively engage in ESG activities experience higher valuation.

Assessment of Indirect Effect

These findings suggest that ESG initiatives serve as an important mediating factor between financial characteristics and firm value, emphasizing the growing importance of sustainability in corporate performance. The indirect effect is shown in Table 3.

| Indirect Effect | Beta (β) | Std Dev | T Statistics | P Values |
|--|------------------|---------|--------------|----------|
| Leverage -> ESG Initiatives -> Firm Value | 0.095 | 0.026 | 3.593 | 0.000 |
| Cash Flow -> ESG Initiatives -> Firm Value | 0.075 | 0.019 | 3.916 | 0.000 |
| Firm Size -> ESG Initiatives -> Firm Value | 0.143 | 0.027 | 5.342 | 0.000 |

Table 3: The Assessment of Indirect (Mediating) Effect

The table 2 presents the indirect effects of leverage, cash flow, and firm size on firm value, mediated through ESG initiatives. The results indicate that leverage positively influences firm value through ESG initiatives ($\beta = 0.095$, $p = 0.000$), suggesting that firms with higher leverage tend to implement ESG initiatives, which in turn enhance their valuation. This implies that leveraging debt may not only support financial performance but also encourage firms to adopt sustainability practices, likely as a means to improve their corporate reputation and mitigate investor concerns regarding financial risk. Similarly, cash flow also positively affects firm value through ESG initiatives ($\beta = 0.075$, $p = 0.000$), indicating that firms with stronger liquidity are more capable of investing in sustainability efforts, which then contribute to their valuation. This supports the idea that companies with ample cash reserves are more likely to engage in ESG activities, either by funding environmentally responsible projects, improving social responsibility efforts, or strengthening governance practices. Among the three indirect effects,

firm size has the strongest influence on firm value through ESG initiatives ($\beta = 0.143$, $p = 0.000$), reinforcing the notion that larger firms are more engaged in ESG activities and that these initiatives significantly enhance their market valuation. Larger companies typically face greater regulatory pressure, stakeholder expectations, and public scrutiny, driving them to adopt ESG initiatives that ultimately strengthen their financial performance and investor appeal. These findings emphasize the mediating role of ESG initiatives, showing that leverage, cash flow, and firm size indirectly contribute to firm value by encouraging sustainable corporate practices, which are increasingly recognized as essential drivers of long-term financial success. The summary of hypothesis testing is shown in Table 3.

| Hypothesis | | Beta (β) | Std Dev | T Statistics | P Values |
|------------|--|------------------|---------|--------------|----------|
| H1 | Leverage -> Firm Value | 0.119 | 0.042 | 2.816 | 0.005 |
| H2 | Cash Flow -> Firm Value | 0.252 | 0.045 | 5.668 | 0.000 |
| H3 | Firm Size -> Firm Value | 0.305 | 0.048 | 6.401 | 0.000 |
| H4 | Leverage -> ESG Initiatives | 0.280 | 0.056 | 5.013 | 0.000 |
| H5 | Cash Flow -> ESG Initiatives | 0.220 | 0.051 | 4.315 | 0.000 |
| H6 | Firm Size -> ESG Initiatives | 0.422 | 0.047 | 9.016 | 0.000 |
| H7 | ESG Initiatives -> Firm Value | 0.338 | 0.050 | 6.719 | 0.000 |
| H8A | Leverage -> ESG Initiatives -> Firm Value | 0.095 | 0.026 | 3.593 | 0.000 |
| H8B | Cash Flow -> ESG Initiatives -> Firm Value | 0.075 | 0.019 | 3.916 | 0.000 |
| H8C | Firm Size -> ESG Initiatives -> Firm Value | 0.143 | 0.027 | 5.342 | 0.000 |

Table 3: The Summary of Hypothesis Testing

Discussion

The results of the hypothesis testing as shown in Table 3 provide comprehensive support for the proposed conceptual model, affirming the significant roles of leverage, cash flow, and firm size in influencing firm value both directly and indirectly through ESG initiatives. Hypotheses H1, H2, and H3, which posit that leverage, cash flow, and firm size respectively have a positive effect on firm value, are all supported with statistically significant results ($p < 0.01$). Among these, firm size ($\beta = 0.305$, $t = 6.401$) exerts the strongest direct influence on firm value, followed by cash flow ($\beta = 0.252$, $t = 5.668$) and leverage ($\beta = 0.119$, $t = 2.816$). These findings align with the earlier hypothesis development, which emphasized that larger firms possess more resources and credibility, strong cash flow enhances operational efficiency and investor trust, and well-managed leverage increases firm value by leveraging tax benefits and signaling financial strength. The relatively lower beta of leverage suggests that while it is a contributing factor, it may carry higher risk or depend on optimal management to exert its full influence.

Further supporting the model, the data validate Hypotheses H4, H5, and H6, which examine the influence of leverage, cash flow, and firm size on ESG initiatives. All three predictors have statistically significant positive effects on ESG adoption, with firm size again showing the strongest impact ($\beta = 0.422$, $t = 9.016$), followed by leverage ($\beta = 0.280$, $t = 5.013$) and cash flow ($\beta = 0.220$, $t = 4.315$). These findings reinforce the premise from the hypothesis development that larger firms are under greater scrutiny and have more resources to implement ESG strategies, and that firms with greater cash flow can better allocate resources toward

sustainable practices. Likewise, firms with higher leverage may be motivated to engage in ESG initiatives to enhance credibility with stakeholders and mitigate risk perception. Hypothesis H7, which posits that ESG initiatives positively influence firm value, is also strongly supported ($\beta = 0.338$, $t = 6.719$), confirming that ESG efforts significantly contribute to firm valuation—likely through improved reputation, risk management, and long-term performance.

Finally, the mediation effects captured in Hypotheses H8A, H8B, and H8C demonstrate that ESG initiatives partially mediate the relationship between financial variables and firm value. The indirect effects are all positive and significant, with firm size having the strongest mediated effect ($\beta = 0.143$, $t = 5.342$), followed by leverage ($\beta = 0.095$, $t = 3.593$) and cash flow ($\beta = 0.075$, $t = 3.916$). These results highlight the critical role of ESG initiatives as an intervening variable that enhances the impact of traditional financial performance indicators on firm value. Compared to the hypothesis development, these findings provide empirical confirmation that ESG not only contributes directly to firm value but also amplifies the effects of internal financial strengths. In particular, the strong indirect effect of firm size through ESG suggests that sustainability practices are most effective and prevalent in larger firms, which further validates the assumption that firm size enables better ESG implementation and ultimately leads to higher firm valuation. Collectively, the findings support an integrated model where financial health and sustainable practices jointly shape firm success in the ASEAN market context.

Conclusions, Limitations and Future Research Agenda

Conclusion

This study aimed to examine the effect of leverage, cash flow, and firm size on firm value in the ASEAN market, with ESG initiatives as an intervening variable. The results provide strong empirical support for the direct impact of these three financial variables on firm value, affirming existing theoretical frameworks and prior empirical findings. Among the three, firm size demonstrated the most substantial direct influence on firm value, followed by cash flow and leverage. These findings highlight the critical importance of scale, liquidity, and capital structure in enhancing firm valuation. More notably, the analysis also confirms that all three variables significantly influence the adoption of ESG initiatives, which, in turn, has a positive and significant effect on firm value. This supports the growing recognition of ESG as not only a tool for sustainability but also as a strategic factor in boosting firm performance and stakeholder confidence.

Furthermore, the study reveals that ESG initiatives serve as a significant mediating factor in the relationship between leverage, cash flow, firm size, and firm value. The indirect effects were statistically significant, with firm size once again exhibiting the strongest influence through ESG pathways. These findings reinforce the idea that sustainable business practices are increasingly intertwined with traditional financial performance indicators and should be integrated into the strategic planning of firms aiming for long-term value creation. Particularly in the ASEAN context—where firms are increasingly exposed to global market expectations and regulatory pressures—ESG adoption provides a competitive edge. Overall, this research offers a holistic perspective that bridges financial performance and sustainability, showing that the two are not only compatible but mutually reinforcing in driving firm value.

Limitations

Despite the strength of the findings, this study has several limitations. First, the analysis is based on aggregated data from the ASEAN region, which encompasses countries with varying levels

of economic development, regulatory environments, and ESG maturity. This regional aggregation may obscure country-specific factors that could influence the relationship between the variables studied. Second, while the study identifies significant relationships, it does not fully explore the causality or the potential time-lagged effects between ESG adoption and firm value, as ESG impacts may take longer to materialize. Additionally, ESG disclosure and performance measurement vary widely across firms and countries, potentially affecting the reliability and comparability of the ESG variable. Lastly, this study primarily focuses on quantitative measures and lacks qualitative insights that could have enriched the interpretation of ESG practices, stakeholder engagement, and managerial motivations behind ESG adoption.

Future Research Agenda

Future research should consider conducting country-specific or industry-specific analyses within the ASEAN region to better capture contextual differences and regulatory impacts on ESG practices and financial performance. Longitudinal studies are also recommended to examine the dynamic effects and potential causality between ESG initiatives and firm value over time. Future studies may incorporate more granular ESG metrics, such as environmental impact scores, governance quality, and social contribution indices, to assess which dimensions of ESG are most influential in value creation. Furthermore, integrating qualitative methods, such as interviews or case studies, could offer deeper insights into the internal decision-making processes and stakeholder pressures that drive ESG adoption. Lastly, researchers could explore the role of external factors such as investor activism, international ESG ratings, and supply chain sustainability to expand the scope of understanding how ESG is embedded into firm strategy and how it influences financial outcomes in emerging markets like ASEAN.

Declaration of Interests

I have nothing to declare

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Declaration of Generative AI in Scientific Writing

During the preparation of this work the author(s) used [ChatGPT 40 / Quillbot] in order to [synthesizing and paraphrasing previous researches]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

References

- R. Robiyanto, B. Frensidy, I. R. Setyawan, and A. D. Huruta, "A different view on ASEAN capital market integration," *Economies*, vol. 9, no. 4, pp. 1–9, 2021, doi: 10.3390/economies9040141.
- S. Y. Chia, *The ASEAN economic community: Progress, challenges, and prospects*, no. 440. 2014. doi: 10.4337/9781783479283.00017.
- H. Q. Do, M. Ishaq Bhatti, and L. Kónya, "On ASEAN capital market and industry integration: A review," *Corp. Ownersh. Control*, vol. 2, no. 1, pp. 8–23, 2016, doi: 10.22495/cocv13i2p1.
- R. Robiyanto, B. A. Nugroho, E. Handriani, and B. Frensidy, "Measuring the effectiveness of ASEAN-5 initiatives from emerging market portfolio's perspective," *Cogent Bus. Manag.*, vol. 10, no. 1, 2023, doi: 10.1080/23311975.2023.2167292.
- M. Aydoğmuş, G. Gülay, and K. Ergun, "Impact of ESG performance on firm value and profitability,"

- Borsa Istanbul Rev., vol. 22, pp. S119–S127, 2022, doi: 10.1016/j.bir.2022.11.006.
- A. Behl, P. S. R. Kumari, H. Makhija, and D. Sharma, “Exploring the relationship of ESG score and firm value using cross-lagged panel analyses: case of the Indian energy sector,” *Ann. Oper. Res.*, vol. 313, no. 1, pp. 231–256, 2022, doi: 10.1007/s10479-021-04189-8.
- F. Derrien, P. Krueger, A. Landier, and T. Yao, “ESG news, future cash flows, and firm value,” *Swiss Financ. Inst. Res. Pap.*, pp. 21–84, 2022.
- J. Lee and S. Kim, “Does a pro-environmental firm attract future cash flow? With an impact of sustainable advertisement on firms’ financial performance,” *Sustain.*, vol. 13, no. 3, pp. 1–14, 2021, doi: 10.3390/su13031348.
- K.-W. Wee, Y.-S. Kang, J. M. Chung, and J. Lee, “The Effect of ESG Levels on Fund Performance and Cash Flows,” *Financ. Plan. Rev.*, vol. 13, no. 2, pp. 83–115, 2020, doi: 10.36029/fpr.2020.05.13.2.83.
- T. H. D. Truong, N. D. K. Le, and T. N. T. Huynh, “Impact of Environmental, Social, and Governance (ESG) Performance on Firm Value, Profitability, and Cash Flows: Evidence in Southeast Asia,” *J. Financ. Account. Res.*, vol. 01, no. 26, pp. 1–14, 2024.
- S. A. Yussof and R. Haron, “The ASEAN Market: Cross-Border Collaboration in Islamic Finance between Malaysia and Thailand,” *Islam. Bank. Financ. Rev.*, vol. 04, pp. 21–39, 2017, doi: 10.32350/ibfr.2017.04.02.
- R. Robiyanto, “Capital Market Integration In Some Asean Countries Revisited,” *J. Manaj.*, vol. 22, no. 2, p. 205, 2018, doi: 10.24912/jm.v22i2.359.
- P. Brusov, T. Filatova, and N. Orekhova, Generalized Modigliani – Miller Theory.
- P. Brusov, T. Filatova, N. Orekhova, V. Kulik, S. Chang, and G. Lin, “Generalization of the Modigliani – Miller Theory for the Case of Variable Profit,” 2021.
- Z. A. F. Al-Slehat, “Impact of Financial Leverage, Size and Assets Structure on Firm Value: Evidence from Industrial Sector, Jordan,” *Int. Bus. Res.*, vol. 13, no. 1, p. 109, 2019, doi: 10.5539/ibr.v13n1p109.
- G. P. Tahu and D. D. B. Susilo, “Effect of Liquidity, Leverage and profitability to The Firm Value (Dividend Policy as Moderating Variable) in Manufacturing Company of Indonesia Stock Exchange,” *Res. J. Financ. Account.*, vol. 8, no. 18, pp. 89–98, 2017, [Online]. Available: www.idx.co.id
- U. A. Ibrahim, “Effect of Financial Leverage on Firm Value: Evidence From Selected Firms Quoted on the Nigerian Stock Exchange,” *Eur. J. Bus. Manag.*, pp. 124–135, 2020, doi: 10.7176/ejbm/12-3-16.
- M.-C. Cheng and Z.-C. Tzeng, “The Effect of Leverage on Firm Value and How The Firm Financial Quality Influence on This Effect,” *World J. Manag.*, vol. 3, no. 2, pp. 30–53, 2011.
- D. A. Rizqia, S. Aisjah, P. Program, and E. Java, “Effect of Managerial Ownership , Financial Leverage , Profitability , Firm Size , and Investment Opportunity on Dividend Policy and Firm Value,” *Res. J. Financ. Account.*, vol. 4, no. 11, pp. 120–130, 2013.
- A. Z. Fajaria, “The Effect of Profitability, Liquidity, Leverage and Firm Growth of Firm Value with its Dividend Policy as a Moderating Variable,” *Int. J. Manag. Stud. Res.*, vol. 6, no. 10, pp. 55–69, 2018, doi: 10.20431/2349-0349.0610005.
- H. Ispriyahadi and B. Abdulah, “Analysis of The Effect of Profitability, Leverage and Firm Size on Firm Value,” *Manag. Account.*, vol. 3, no. 2, pp. 64–80, 2021, [Online]. Available: <http://e-journal.stie-kusumanegara.ac.id>
- F. Prasetya Margono and R. Gantino, “Influence of Firm Size, Leverage, Profitability, and Dividend Policy on Firm Value of Companies in Indonesia Stock Exchange,” *Copernican J. Financ. Account.*, vol. 10, no. 2, pp. 45–61, 2021, doi: 10.12775/cjfa.2021.007.
- S. F. Bon and S. Hartoko, “The Effect of Dividend Policy, Investment Decision, Leverage, Profitability, and Firm Size on Firm Value,” *Eur. J. Bus. Manag. Res.*, vol. 7, no. 3, pp. 7–13, 2022, doi:

- A. Gregory, R. Tharyan, and J. Whittaker, "Corporate Social Responsibility and Firm Value: Disaggregating the Effects on Cash Flow, Risk and Growth," *J. Bus. Ethics*, vol. 124, no. 4, pp. 633–657, 2014, doi: 10.1007/s10551-013-1898-5.
- M. Altuntas, A. P. Liebenberg, E. D. Watson, and S. Yildiz, "Western Risk and Insurance Association Hedging, Cash Flows, and Firm Value: Evidence of an Indirect Effect," *Source J. Insur. Issues*, vol. 40, no. 1, pp. 1–22, 2017.
- G. . S. Oktaryani and S. S. A. Mannan, "The Moderating Effect of Dividend Policy on Free Cash Flow and Profitability Towards Firm Value," *Jmm Unram - Master Manag. J.*, vol. 7, no. 3, pp. 1–12, 2018, doi: 10.29303/jmm.v7i3.311.
- I. A. M. C. Dewi, M. M. R. Sari, I. G. A. . Budiasih, and H. B. Suprasto, "Free cash flow effect towards firm value," *Int. Res. J. Manag. IT Soc. Sci.*, vol. 6, no. 3, pp. 108–116, 2019, doi: 10.21744/irjmis.v6n3.643.
- Y. Ni, P. Huang, P. Chiang, and Y. Liao, "Cash flow statements and firm value: Evidence from Taiwan," *Q. Rev. Econ. Financ.*, vol. 71, pp. 280–290, 2019, doi: 10.1016/j.qref.2018.09.004.
- J. Tangngisalu, "Effect of Cash Flow and Corporate Social Responsibility Disclosure on Firm Value," *Atestasi J. Ilm. Akunt.*, vol. 3, no. 2, pp. 142–149, 2020, doi: 10.57178/atestasi.v3i2.263.
- A. Launtu, "Impact of Cash Flow and Dividend Policy on Manufacturing Firm Value," *Atestasi J. Ilm. Akunt.*, vol. 4, no. 1, pp. 105–111, 2021, doi: 10.57178/atestasi.v4i1.170.
- R. B. Bukit, B. Haryanto, and P. Ginting, "Environmental performance, profitability, asset utilization, debt monitoring and firm value," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 122, no. 1, 2018, doi: 10.1088/1755-1315/122/1/012137.
- L. Stevanus Lumapow and R. Arthur Ferry Tumiwa, "The Effect of Dividend Policy , Firm Size , and Productivity to The Firm Value," *Res. J. Financ. Account.*, vol. 8, no. 22, pp. 20–24, 2017.
- S. Setiadharna and M. Machali, "The Effect of Asset Structure and Firm Size on Firm Value with Capital Structure as Intervening Variable," *J. Bus. Financ. Aff.*, vol. 06, no. 04, 2017, doi: 10.4172/2167-0234.1000298.
- R. Sondakh, "the Effect of Dividend Policy, Liquidity, Profitability and Firm Size on Firm Value in Financial Service Sector Industries Listed in Indonesia Stock Exchange 2015-2018 Period," *Accountability*, vol. 8, no. 2, p. 91, 2019, doi: 10.32400/ja.24760.8.2.2019.91-101.
- I. Zuhroh, "The Effects of Liquidity, Firm Size, and Profitability on the Firm Value with Mediating Leverage," *KnE Soc. Sci.*, vol. 3, no. 13, p. 203, 2019, doi: 10.18502/kss.v3i13.4206.
- A. Husna and I. Satria, "Effects of Return on Asset, Debt To Asset Ratio, Current Ratio, Firm Size, and Dividend Payout Ratio on Firm Value," *Int. J. Econ. Financ. Issues*, vol. 9, no. 5, pp. 50–54, 2019, doi: 10.32479/ijefi.8595.
- Y. B. Adeneye, I. Kammoun, and S. N. A. Ab Wahab, "Capital structure and speed of adjustment: the impact of environmental, social and governance (ESG) performance," *Sustain. Accounting, Manag. Policy J.*, vol. 14, no. 5, pp. 945–977, 2023, doi: 10.1108/SAMPJ-01-2022-0060.
- Y. Mo, F. Wei, and Y. Huang, "Does Fulfilling ESG Responsibilities Curb Corporate Leverage Manipulation? Evidence from Chinese-Listed Companies," *Sustain.*, vol. 16, no. 13, 2024, doi: 10.3390/su16135543.
- R. Abdul Rahman and M. F. Alsayegh, "Determinants of Corporate Environment, Social and Governance (ESG) Reporting among Asian Firms," *J. Risk Financ. Manag.*, vol. 14, no. 4, 2021, doi: 10.3390/jrfm14040167.
- [40] M. Akhtar, K. Yusheng, M. Haris, Q. Ul-Ain, and H. M. Javaid, "Impact of financial leverage on sustainable growth, market performance, and profitability," *Econ. Chang. Restruct.*, vol. 55, no. 1, pp.

- 737–774, 2022.
- P. Sharma, P. Panday, and R. C. Dangwal, “Determinants of environmental, social and corporate governance (ESG) disclosure: a study of Indian companies,” *Int. J. Discl. Gov.*, vol. 17, no. 4, pp. 208–217, 2020, doi: 10.1057/s41310-020-00085-y.
- K. P. Modugu, “Do corporate characteristics improve sustainability disclosure? Evidence from the UAE,” *Int. J. Bus. Perform. Manag.*, vol. 21, no. 1–2, pp. 39–54, 2020, doi: 10.1504/IJBPM.2020.106106.
- X. Chang, K. Fu, Y. Jin, and P. F. Liem, *Sustainable Finance: ESG/CSR, Firm Value, and Investment Returns**, vol. 51, no. 3. 2022. doi: 10.1111/ajfs.12379.
- I. Saleh, M. Abu Afifa, and A. Alkhawaja, “Environmental, social, and governance (ESG) disclosure, earnings management and cash holdings: Evidence from a European context,” *Bus. Ethics, Environ. Responsib.*, no. December, 2023, doi: 10.1111/beer.12650.
- I. Chasiotis, D. Gounopoulos, D. Konstantios, and V. Patsika, “ESG Reputational Risk, Corporate Payouts and Firm Value,” *Br. J. Manag.*, vol. 35, no. 2, pp. 871–892, 2024, doi: 10.1111/1467-8551.12745.
- C. M. Putri and D. Puspawati, “The Effect of ESG Disclosure, Company Size, and Leverage On Company’s Financial Performance in Indonesia,” *Int. J. Bus. Manag. Technol.*, vol. 7, no. 2, pp. 252–262, 2023, [Online]. Available: www.theijbmt.com
- H. Safaeianpoor and M. R. Shoorvarzy, “The Relationship between Corporate Social Responsibility, Financial Performance, and Firm Size,” *J. Econ. Manag. Perspect.*, vol. 11, no. 4, pp. 969–978, 2017, [Online]. Available: <https://search.proquest.com/docview/2267400590?accountid=14338%0Ahttps://tilburguniversity.on.worldcat.org/atoztitles/link?genre=article&issn=25235338&title=Journal+of+Economic+%26+Management+Perspectives&volume=11&issue=4&date=2017&atitle=The+Relationshi>
- R. G. Martínez, M. L. Medrano-García, and D. A. Navas, “Evaluating ESG performance: The influence of firm size and gender diversity,” *Small Bus. Int. Rev.*, vol. 8, no. 2, pp. 1–11, 2024.
- R. S. Shawat, A. Zamel, oshitsugu Otake, S. Sabry, and H. Badawy, “How Firm Size Shapes the ESG and Financial Performance Nexus: Insights from The MENA Region,” *J. Account. Audit. Res. Pract.*, vol. 2024, pp. 1–15, 2024, doi: 10.5171/2024.145355.
- M. Postiglione, C. Carini, and A. Falini, “Assessing Firm ESG Performance Through Corporate Survival: The Moderating Role of Firm Size,” *Int. Rev. Financ. Anal.*, vol. 100, no. December 2024, p. 103973, 2025, doi: 10.1016/j.irfa.2025.103973.
- P. M. Bolibok, “Does Firm Size Matter for ESG Risk? Cross-Sectional Evidence from the Banking Industry,” *Sustain.*, vol. 16, no. 2, 2024, doi: 10.3390/su16020679.
- S. Dremptic, C. Klein, and B. Zwergel, “The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review,” *J. Bus. Ethics*, vol. 167, no. 2, pp. 333–360, 2020, doi: 10.1007/s10551-019-04164-1.
- J. Dobrick, C. Klein, and B. Zwergel, “Size bias in refinitiv ESG data,” *Financ. Res. Lett.*, vol. 55, no. PB, p. 104014, 2023, doi: 10.1016/j.frl.2023.104014.
- O. T. Akgun, T. J. Mudge, and B. Townsend, “How Company Size Bias in ESG Scores Impacts the Small Cap Investor,” *J. Impact ESG Invest.*, vol. 1, no. 4, pp. 31–44, 2021, doi: 10.3905/jesg.2021.1.022.
- B. Yoon, J. H. Lee, and R. Byun, “Does ESG performance enhance firm value? Evidence from Korea,” *Sustain.*, vol. 10, no. 10, 2018, doi: 10.3390/su10103635.
- A. Aboud and A. Diab, “The impact of social, environmental and corporate governance disclosures on firm value: Evidence from Egypt,” *J. Account. Emerg. Econ.*, vol. 8, no. 4, pp. 442–458, 2018, doi: 10.1108/JAEE-08-2017-0079.
- D. Junius, A. Adisurjo, Y. A. Rijanto, and Y. E. Adelina, “The Impact of ESG Performance to Firm Performance and Market Value,” *J. Apl. Akunt.*, vol. 5, no. 1, pp. 21–41, 2020.

- W. C. Wong, J. A. Batten, A. H. Ahmad, S. B. Mohamed-Arshad, S. Nordin, and A. A. Adzis, "Does ESG certification add firm value?," *Financ. Res. Lett.*, vol. 39, p. 101593, 2021, doi: 10.1016/j.frl.2020.101593.
- A. Quintiliani, "ESG and Firm Value," *Account. Financ. Res.*, vol. 11, no. 4, p. 37, 2022, doi: 10.5430/afr.v11n4p37.
- G. Zhou, L. Liu, and S. Luo, "Sustainable development, ESG performance and company market value: Mediating effect of financial performance," *Bus. Strateg. Environ.*, vol. 31, no. 7, pp. 3371–3387, 2022, doi: 10.1002/bse.3089.
- Z. Feng and Z. Wu, "ESG Disclosure, REIT Debt Financing and Firm Value," *J. Real Estate Financ. Econ.*, vol. 67, no. 3, pp. 388–422, 2023, doi: 10.1007/s11146-021-09857-x.
- N. Hikmah and D. Daljono, "The Impact of ESG Disclosure, Liquidity, and Leverage on Firm Value Mediated by Profitability Performance," *Kontigensi J. Ilm. Manaj.*, vol. 11, no. 2, pp. 817–831, 2023, doi: 10.56457/jimk.v11i2.504.
- J. F. Dihadjo and H. Hersugondo, "Exploring the Impact of Esg Disclosure, Dividend Payout Ratio, and Institutional Ownership on Firm Value: a Moderated Analysis of Firm Size," *J. Ekon. Bisnis dan Kewirausahaan*, vol. 12, no. 2, p. 184, 2023, doi: 10.26418/jebik.v12i2.64129.

| Variable | Definition | Operational Definition | Formula |
|-----------------|--|---|--|
| Leverage | The extent to which a firm uses debt to finance its operations | Measured as the debt-to-equity ratio | Total Debt/Total Equity |
| Net Cash Flow | Cash flow from operating activities representing liquidity and operational performance | Measured as net cash flow from operations (in millions) | Net Cash Flow from Operating Activities |
| Firm Size | Total assets representing the scale of the firm | Measured as the natural logarithm of total assets | Ln (Total Assets) |
| ESG Initiatives | Level of corporate engagement in environmental, social, and governance practices | Composite score from ESG disclosures based on GRI framework | Sum of ESG Indicators Score |
| Firm Value | Market valuation of a firm relative to the replacement cost of its assets | Measured using Tobin's Q ratio | (Market Value of Equity + Book Value of Debt) / Book Value of Assets |

Table X: Definition and Operationalization of Variables