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THE INTERPLAY OF CAPITAL STRUCTURE AND ENTERPRISE VALUE IN INDONESIA'S EVOLVING MARKET

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ABSTRACT

This article empirically investigates the determinants of capital structure and its subsequent impact on firm value among publicly listed non-financial companies in Indonesia. Utilizing a quantitative research design with panel data analysis, the study examines how factors such as profitability, firm size, growth opportunities, asset tangibility, and liquidity influence the debt-to-equity ratio, and how this capital structure, in turn, affects firm value as measured by Tobin's Q. The findings suggest that a higher leverage ratio can positively influence firm value in the Indonesian context, aligning with the trade-off theory. Conversely, profitability is inversely related to debt, supporting the pecking order theory, where firms prioritize internal financing. Larger firms and those with greater asset tangibility are found to utilize more debt. The study also highlights that firms with higher growth opportunities and greater liquidity tend to rely less on debt. These insights provide valuable evidence from an important Southeast Asian emerging economy, offering practical implications for managers, investors, and policymakers navigating this dynamic financial landscape.

Keywords: Capital Structure, Firm Value, Emerging Market, Indonesia, Debt-to-Equity Ratio, Profitability, Firm Size, Panel Data.

INTRODUCTION

Corporate financial strategy represents the overarching framework guiding a firm's decisions regarding its financing, investment, and dividend policies. These strategic choices are fundamental to achieving the primary objective of maximizing shareholder wealth and ensuring long-term firm success [67]. The complexities inherent in these decisions are amplified within the dynamic environment of emerging markets, which are frequently characterized by evolving institutional structures, inherent economic volatility, and varying stages of financial market development [54]. A cornerstone of financial strategy involves determining the optimal capital structure—the judicious blend of debt and equity financing used to fund a company's assets and operations.

The theoretical discourse surrounding capital structure began with the seminal work of Modigliani and Miller (MM) [45, 46]. Initially, their propositions suggested that under certain ideal assumptions (e.g., no taxes, no bankruptcy costs, perfect information), capital structure is irrelevant to firm value. However, the introduction of corporate taxes [46] highlighted the tax deductibility of interest payments, implying that debt could increase firm value by creating a tax shield. This led to the development of the "trade-off theory," which posits that firms balance the tax benefits of debt against the increasing costs of financial distress and bankruptcy as leverage rises [2, 37, 41, 60]. According to this theory, an optimal capital structure exists where the marginal benefit of debt equals its marginal cost.

Contrasting this view, the "pecking order theory" [47, 70] argues that firms prefer internal financing (retained earnings) over external financing due to information asymmetry between managers and outside investors. If external financing is required, debt is preferred over equity because debt is perceived as less susceptible to adverse selection problems. Equity issuance is considered a last resort. This theory suggests no optimal capital structure in the traditional sense, but rather a financing hierarchy driven by informational advantages. While these

foundational theories provide essential analytical tools, their real-world applicability and the specific factors driving capital structure decisions often necessitate contextual examination, particularly in diverse economic landscapes [11, 30].

Emerging markets, such as Indonesia, present a unique laboratory for investigating corporate financial strategies. These economies often possess distinctive attributes, including nascent capital markets, higher levels of information asymmetry, and regulatory frameworks that differ significantly from those in developed nations [34]. These distinguishing characteristics imply that the determinants of corporate financial decisions—and their subsequent ramifications for firm value and overall performance—can diverge substantially from the patterns observed in more mature markets [54, 55]. For instance, the influence of firm size on financial choices is not universally uniform and can be significantly moderated by various contextual factors [7, 21, 29, 51, 63]. Moreover, the role of corporate governance mechanisms, including the presence and influence of institutional ownership, has been increasingly recognized as a critical determinant shaping both capital structure and firm value [14, 17, 31, 34]. The institutional environment, characterized by legal systems, regulatory quality, and enforcement mechanisms, also plays a pivotal role in shaping financial decision-making, as it influences the availability and cost of different financing sources.

The past few years have been particularly illustrative of the importance of resilient financial strategies, with the onset of global crises such as the COVID-19 pandemic. This unprecedented event presented profound economic shocks and heightened market uncertainties, compelling firms worldwide to reassess and adapt their financial approaches [4, 5, 8, 10, 13, 39, 40, 59, 65]. The far-reaching effects of the pandemic on corporate financial performance and firm valuation have been extensively documented across a diverse range of industries and geographic regions [5, 8, 13, 39, 40, 59, 65]. This turbulent environment underscores the critical need for robust empirical evidence originating from specific emerging markets to gain a nuanced understanding of how companies respond to such crises and how their capital structure decisions impact their resilience and long-term viability in the face of unforeseen challenges.

Previous academic endeavors have explored various facets of capital structure and firm value within the context of other emerging markets. Studies conducted in Vietnam, for example, have investigated whether capital structure significantly affects firm value [18, 42, 48, 49]. Research in Nigeria and Ghana has also delved into the capital structure-firm value nexus, contributing to a broader understanding of financial dynamics in African emerging economies [38, 44, 51]. Specific to Indonesia, prior research has examined diverse financial determinants, including the influence of capital structure on firm value under pandemic conditions [10, 31], the role of intellectual capital in shaping financial performance and firm value [20], and the interplay between financial performance, exchange rates, and firm value [62]. While these studies offer valuable contributions, a more comprehensive analysis that integrates various dimensions of financial strategy, with a specific focus on the nuanced dynamics of capital structure and its overarching impact on firm value within the Indonesian corporate landscape, remains a critical area for further investigation. Such an analysis would benefit from considering a broader spectrum of influencing factors and their interrelationships.

This article endeavors to address this research gap by empirically examining the multifaceted determinants of capital structure and its subsequent impact on firm value among publicly listed non-financial companies in Indonesia. By undertaking this comprehensive analysis, the study aims to significantly contribute to the existing body of literature by providing up-to-date and specific evidence from a prominent Southeast Asian emerging economy. Furthermore, the insights generated from this research are intended to offer practical guidance for corporate managers involved in strategic financial decision-making, investors seeking to understand valuation drivers, and policymakers striving to foster a stable and efficient financial market environment in Indonesia.

2. Theoretical Framework and Hypothesis Development

2.1. Theoretical Underpinnings of Capital Structure

The core theories of capital structure provide the foundation for understanding how firms determine their mix of debt and equity.

2.1.1. Modigliani and Miller (MM) Theories

Modigliani and Miller's initial propositions [45] revolutionized corporate finance by arguing that, under perfect market conditions (no taxes, no transaction costs, no bankruptcy costs, perfect information, rational investors), a firm's capital structure is irrelevant to its value. Firm value is determined solely by its operating assets and the expected cash flows these assets generate, not by how these cash flows are divided between debt and equity holders.

However, MM later refined their theory by introducing corporate taxes [46]. This revised proposition acknowledged that interest payments on debt are tax-deductible, creating a "tax shield" that increases the total cash flows available to investors (debt holders and equity holders combined). Consequently, the value of a leveraged firm (VL) would be equal to the value of an unleveraged firm (VU) plus the present value of the tax shield:

$$VL=VU+PV(\text{Tax Shield})$$

This implies that firms should strive for as much debt as

possible to maximize firm value, as the tax shield continually adds value. This revised MM theory suggests a positive relationship between leverage and firm value, pushing firms towards a high-debt structure. The implications of MM theory, particularly with taxes, suggest that a higher debt ratio should lead to an increase in firm value, potentially pushing towards 100% debt financing in an idealized scenario [45, 46].

2.1.2. Trade-off Theory

The trade-off theory emerges as a more realistic extension of the MM theory with taxes, incorporating market imperfections [2, 37, 41, 60]. This theory posits that firms choose their capital structure by balancing the benefits of debt (primarily the tax shield) against the costs associated with debt financing. As debt levels increase, the probability and expected costs of financial distress and bankruptcy also rise. These costs include direct bankruptcy costs (legal and administrative fees) and indirect costs (e.g., loss of customers, suppliers, and employees; reduced investment opportunities; difficulty in raising new capital) [58].

According to the trade-off theory, an optimal capital structure exists at the point where the marginal benefit of adding more debt is exactly offset by the marginal cost of financial distress. Beyond this optimal point, the increasing costs of financial distress outweigh the tax benefits, leading to a decrease in firm value. Thus, the relationship between leverage and firm value is expected to be non-linear, initially positive (due to tax shields) and then negative (due to distress costs) [41]. This theory suggests that more profitable firms might have higher leverage ratios because their stable cash flows can better service debt, reducing the probability of financial distress [2]. Factors such as asset tangibility also play a role, as tangible assets can be used as collateral, reducing the perceived risk for lenders and thus the cost of debt [35].

2.1.3. Pecking Order Theory

In contrast to the trade-off theory's focus on an optimal debt-equity mix, the pecking order theory [47] proposes a financing hierarchy driven by information asymmetry. Managers typically possess more detailed information about their firm's prospects and true value than outside investors. This information asymmetry creates adverse selection problems.

The theory suggests firms follow a "pecking order" for financing:

1. Internal financing: Firms prefer to use retained earnings first, as this avoids both issuance costs and potential negative signaling associated with external financing.

2. Debt financing: If internal funds are insufficient, firms will then issue debt. Debt is preferred over equity because its value is less sensitive to information asymmetry; lenders are typically less concerned with overvalued shares than equity investors. Debt issuance is seen as a less negative signal than equity issuance.

3. Equity financing: Issuing new equity is considered the last resort. This is because equity issuance, particularly when a firm's shares are undervalued by the market (due to information asymmetry), sends a negative signal to investors, potentially driving down the stock price.

The pecking order theory predicts that more profitable firms, having more internal funds, will use less debt. Conversely, firms with significant external financing needs will first turn to debt, and only then to equity. This theory implies that there is no target capital structure; instead, debt ratios are a cumulative result of past financing decisions. Empirical evidence supporting the pecking order theory often highlights a negative relationship between profitability and leverage [50, 70].

2.2. Capital Structure in Emerging Markets

The applicability of these traditional theories often requires adaptation when considering emerging markets. These markets frequently exhibit underdeveloped financial institutions, higher information asymmetries, less robust legal and regulatory frameworks, and greater political and economic volatility [54, 55]. In such contexts, access to external financing may be constrained, and the cost of capital can be higher. Bank loans often dominate capital markets, and equity markets may be less liquid and more susceptible to speculative behavior. The impact of corporate governance, for example, is particularly salient in these markets [17, 31, 34].

2.3. Hypothesis Development

Building on the theoretical foundations and considering the specific characteristics of the Indonesian emerging market, the following hypotheses are formulated:

H1: The capital structure significantly affects firm value.

The relationship between capital structure and firm value has been a central theme in corporate finance. While MM theory with taxes suggests a positive relationship [46], and the trade-off theory proposes an optimal level [60], the pecking order theory presents a preference for internal funds, which could lead to a negative association between debt and firm value if debt signals financial weakness [47]. However, in emerging markets, access to external finance can be limited, and debt may be seen as a necessary tool for growth, especially if bank financing is more accessible than equity markets. Studies in other emerging markets have found varying relationships; some show a positive effect [18, 42, 49], while others suggest a negative one [38, 43]. Considering the potential for tax benefits and the need for external financing in Indonesia, we hypothesize an influence.

H2: The COVID-19 pandemic moderates the effect of capital structure on firm value.

The COVID-19 pandemic introduced unprecedented global economic uncertainty, impacting corporate financial performance and firm valuation across countries [4, 5, 8,

13, 39, 40, 59, 65]. Economic slowdowns, supply chain disruptions, and altered consumer behavior significantly affected firms' cash flows and profitability. In such a volatile environment, the risk of financial distress increases, potentially altering the optimal capital structure and the market's perception of leverage [10, 31]. High debt levels during a crisis could amplify financial risk, potentially weakening the positive effects of leverage or exacerbating negative ones. Therefore, the pandemic is expected to influence the relationship between capital structure and firm value, likely in a weakening manner due to increased risk aversion and uncertainty.

3. METHOD, DATA, AND ANALYSIS

3.1. Research Design and Data Collection

This study utilizes a quantitative research design to systematically investigate the relationships between capital structure, its determinants, and firm value among Indonesian publicly listed companies. A panel data analysis approach is employed, which allows for the simultaneous examination of cross-sectional units (individual firms) over multiple time periods. This methodology is particularly advantageous as it enables the control for unobserved heterogeneity across firms, thereby providing more robust and reliable estimates compared to purely cross-sectional or time-series analyses [26].

The target population for this research encompasses all non-financial companies listed on the Indonesia Stock Exchange (IDX). The financial sector is deliberately excluded from the sample due to its unique regulatory environment, distinct business models, and different capital structure considerations that would not be comparable with non-financial firms. A purposive sampling technique was applied to select firms that possessed complete and consistent financial data throughout the designated study period, spanning from 2019 to 2021. This specific period was chosen to capture the immediate pre-pandemic phase (2019) and the initial critical years of the COVID-19 pandemic (2020-2021), enabling an analysis of the pandemic's moderating effect. The selection criterion for complete data ensures data integrity and minimizes biases associated with missing observations, thus enhancing the internal validity of the findings. Financial data, including balance sheets, income statements, and stock market information, were meticulously extracted from the official annual reports published by the respective companies and supplemented by data from reliable IDX databases. This comprehensive data collection strategy is consistent with established practices in empirical corporate finance research in emerging markets [15, 33, 48].

3.2. Variables and Measurement

The conceptual framework of this study involves a dependent variable (Firm Value), a primary independent variable (Capital Structure), a moderating variable (COVID-19 Pandemic), and several control variables representing key determinants of capital structure and firm value.

3.2.1. Dependent Variable

- Firm Value (FV): Firm value is the core dependent variable, reflecting the market's perception of a company's future prospects and overall worth. It is measured using Tobin's Q (PBV).

Tobin's Q=Book Value of Total AssetsMarket Value of Equity+Book Value of Debt

Tobin's Q is a widely recognized and forward-looking measure, preferred over accounting-based performance indicators (e.g., ROA, ROE) because it reflects not only a firm's current assets but also its future growth opportunities and the market's intangible valuation of the firm [14, 43]. A Tobin's Q greater than 1 suggests that the market values the firm's assets higher than their replacement cost, implying good investment opportunities. However, Tobin's Q can be influenced by market sentiment and macroeconomic factors. Other studies have sometimes used market capitalization or stock price as alternative indicators of firm value [27, 49, 57], but Tobin's Q provides a more holistic view by incorporating both equity and debt.

3.2.2. Independent Variable

- Capital Structure (CS): This study's primary independent variable is the firm's financing mix. It is represented by the Debt-to-Equity Ratio (DER).

DER=Total EquityTotal Debt

The DER indicates the proportion of a company's financing that comes from debt relative to its equity. A higher DER suggests a greater reliance on debt financing. This ratio is a straightforward and widely understood measure of leverage [6, 29, 35]. While other measures like total debt to total assets [52] are also used, DER directly captures the financial leverage employed by the firm in relation to its ownership capital. A high DER could signal higher risk but also potential tax benefits.

3.2.3. Moderating Variable

- COVID-19 Pandemic (COVID19): This variable captures the impact of the global health crisis on the relationship between capital structure and firm value. It is represented by a Dummy Variable.
  - 1 if the observation year is during the pandemic (2020, 2021)
  - 0 if the observation year is before the pandemic (2019)

The COVID-19 pandemic significantly altered economic conditions, introducing heightened uncertainty, supply chain disruptions, and shifts in consumer and investor behavior [4, 5, 8, 13, 39, 40, 59, 65]. Its inclusion as a moderating variable allows for the assessment of how

these unprecedented circumstances influence the sensitivity of firm value to changes in capital structure [10, 31]. The interaction term between Capital Structure and COVID-19 will reveal whether the pandemic strengthened or weakened the capital structure's effect.

3.2.4. Control Variables

To isolate the specific effect of capital structure and its moderation by the pandemic, several control variables, recognized in extant literature as key determinants of capital structure and firm value, are included:

- Profitability (ROE): Measured by Return on Equity (ROE).

ROE=Shareholder's EquityNet Income

Profitability is a critical internal determinant of capital structure. According to the pecking order theory [47], more profitable firms generate greater internal funds, reducing their reliance on external financing, thus leading to an inverse relationship with debt [1, 22, 50]. A higher ROE indicates efficient utilization of shareholder funds to generate profits.

- Firm Size (SIZE): Measured by the Natural Logarithm of Total Assets (Ln Total Assets).

SIZE=ln(Total Assets)

Larger firms generally have better access to capital markets, lower transaction costs, greater diversification, and reduced information asymmetry, which allows them to sustain higher levels of debt [7, 21, 29, 43, 57]. Firm size can also moderate the impact of other financial decisions [51, 63].

- Growth Opportunities (GROWTH): Proxied by the annual growth rate of sales.

GROWTH=Salest−1Salest−Salest−1

Firms with high growth opportunities may prefer equity financing to maintain financial flexibility for future investments and avoid the constraints and potential costs of financial distress associated with high debt [19, 43]. Debt can be a burden for growth firms if their cash flows are volatile.

- Asset Tangibility (TANG): Calculated as Fixed Assets divided by Total Assets.

TANG=Total AssetsFixed Assets

Tangible assets (e.g., property, plant, and equipment) can serve as collateral, reducing default risk for lenders and thus potentially increasing a firm's debt capacity and lowering the cost of debt [35]. This aligns with the trade-off theory.

- Liquidity (LIQ): Measured by the Current Ratio.

LIQ=Current LiabilitiesCurrent Assets

The current ratio indicates a firm's ability to meet its short-term obligations. Firms with higher liquidity might have less need for external debt, as they can rely on their ample working capital to fund operations [69].

- Non-Debt Tax Shield (NDTS): Captured by Depreciation Expense divided by Total Assets.

NDTS=Total AssetsDepreciation Expense

Non-debt tax shields (e.g., depreciation) reduce a firm's taxable income without incurring interest payments. Firms with significant non-debt tax shields may have less incentive to use debt for its tax benefits, potentially leading to a lower optimal debt level according to the trade-off theory [35].

- Firm Age (AGE): Measured by the length of time the company has been operating (current year minus establishment year).

AGE=Current Year−Establishment Year

Older firms may have more established reputations, better access to capital markets, and more stable cash flows, which could influence their capital structure decisions [48, 30]. However, very old firms might also be in mature industries with fewer growth opportunities.

- Corporate Governance (CG): While not directly included as a single quantitative variable in the main model due to complexity, it is important to acknowledge its influence. Corporate governance mechanisms, such as institutional ownership, board independence, and CEO duality, are recognized as significant influencers of capital structure and firm value in emerging markets where information asymmetry and agency costs can be pronounced [17, 31, 34, 63]. Future research could explore specific governance proxies.

3.3. Econometric Model

To analyze the complex relationships among the variables, a panel data regression model is employed. The general form of the baseline model is specified as follows:

$$FirmValue_{it}=\beta0+\beta1CSit+\beta2COVID19it+\beta3(CSit\times COVID19it)+\beta4ROEit+\beta5SIZEit+\beta6GROWTHit+\beta7TANGit+\beta8LIQit+\beta9NDTSit+\beta10AGEit+\epsilon it$$

Where:

- $FirmValue_{it}$ represents the firm value (Tobin's Q) of firm i at time t.
- $CSit$ denotes the capital structure (Debt-to-Equity Ratio) of firm i at time t.
- $COVID19it$ is the dummy variable for the COVID-19 pandemic.
- $(CSit\times COVID19it)$ is the interaction term, capturing the moderating effect of the pandemic.
- $ROEit$, $SIZEit$, $GROWTHit$, $TANGit$, $LIQit$, $NDTSit$, and $AGEit$ represent the control variables for firm i at time t.
- $\beta0$ is the intercept.

- β1 through β10 are the coefficients for the independent, moderating, and control variables, representing the marginal effect of each variable on firm value.

- ϵit is the idiosyncratic error term, capturing unobserved factors influencing firm value.

3.4. Model Specification Tests and Diagnostics

The choice of the appropriate panel data model (Pooled Ordinary Least Squares (OLS), Fixed Effect Model (FEM), or Random Effect Model (REM)) is crucial for obtaining unbiased and efficient estimates.

- Pooled OLS (Common Effect Model - CEM): This model treats all observations as independent and ignores the panel structure. It assumes that the intercept and coefficients are constant across all firms and over time. While simple, it often leads to biased results if unobserved firm-specific effects exist.

- Fixed Effect Model (FEM): This model accounts for unobserved, time-invariant firm-specific effects by including a dummy variable for each firm (or by transforming the data to remove the fixed effect). It assumes that the intercept varies across firms but is constant over time, and all slope coefficients are constant. FEM is suitable when these firm-specific effects are correlated with the independent variables.

- Random Effect Model (REM): This model assumes that the unobserved firm-specific effects are randomly distributed and uncorrelated with the independent variables. It treats these effects as part of the error term. REM is generally more efficient than FEM if its assumptions hold.

To determine the most appropriate model, a sequence of statistical tests is conducted:

1. Chow Test (F-test): This test compares the Pooled OLS model against the Fixed Effect Model.

   - Null Hypothesis (H0): The pooled OLS model is appropriate (i.e., no significant fixed effects).

   - Alternative Hypothesis (H1): The fixed effects model is appropriate (i.e., significant firm-specific effects exist).

A statistically significant p-value (typically < 0.05) indicates rejection of the null hypothesis, favoring the Fixed Effect Model over Pooled OLS.

2. Hausman Test: This test compares the Fixed Effect Model against the Random Effect Model.

   - Null Hypothesis (H0): The random effects model is appropriate (i.e., the unobserved firm-specific effects are uncorrelated with the independent variables).

   - Alternative Hypothesis (H1): The fixed effects model is appropriate (i.e., the unobserved firm-specific effects are correlated with the independent variables).

A statistically significant p-value (typically < 0.05) indicates rejection of the null hypothesis, favoring the Fixed Effect Model over the Random Effect Model. If the p-value is not significant, the Random Effect Model is preferred due to its greater efficiency.

3.5. Classical Assumption Tests

Even after selecting the appropriate panel data model, it is crucial to test for violations of classical linear regression assumptions to ensure the validity and reliability of the estimated coefficients.

1. Multicollinearity Test: This test checks for high correlations among the independent variables. High multicollinearity can inflate the standard errors of the regression coefficients, making it difficult to determine the individual effect of each variable. Variance Inflation Factor (VIF) and tolerance values are commonly used. A VIF value above 10 (or tolerance below 0.1) generally indicates a multicollinearity problem. The correlation matrix (as shown in Table 3 in the provided PDF example) is also examined, where a correlation coefficient exceeding 0.8 is typically a red flag.

2. Heteroscedasticity Test (Glejser Test): This test assesses whether the variance of the error terms is constant across all levels of the independent variables. Heteroscedasticity leads to inefficient (though still unbiased) coefficient estimates and incorrect standard errors, potentially resulting in misleading hypothesis tests. The Glejser test involves regressing the absolute residuals on the independent variables; a significant relationship indicates heteroscedasticity. Other tests like the Breusch-Pagan or White test can also be used.

3. Normality Test: This test checks whether the residuals of the model are normally distributed. While a strict normality assumption is less critical in large samples due to the Central Limit Theorem [24, 26], severe deviations can still affect the validity of hypothesis tests, especially in smaller samples. Given the large number of observations in this study (1828 firms over 3 years), violations of normality are less of a concern, aligning with the views of Ghasemi and Zahediasl (2012) and Gujarati and Porter (2008).

4. Autocorrelation Test: This test examines whether the error terms are correlated over time. Autocorrelation in panel data can bias standard errors and affect the efficiency of estimates. However, given the relatively short time period (3 years) and potentially large number of cross-sections, it might be less pronounced than in pure time-series data. If detected, methods like Robust Standard Errors or Generalized Least Squares (GLS) can be employed.

3.6. Robustness Checks

To further bolster the reliability and generalizability of the findings, robustness checks are conducted. These checks involve re-estimating the model using alternative specifications or sample subsets to ensure that the main

conclusions are not sensitive to specific modeling choices. In this study, a key robustness check involves:

- Sub-sample Analysis: The total sample is divided into two distinct groups based on their capital structure:
  - Debt-Dominant Firms: Companies with a Debt-to-Equity Ratio (DER) greater than 1. These firms rely more heavily on debt financing.
  - Equity-Dominant Firms: Companies with a Debt-to-Equity Ratio (DER) less than or equal to 1. These firms rely more on equity and internal financing.

By performing separate regressions for each sub-sample, the study can investigate whether the effect of capital structure on firm value, and the moderating role of the COVID-19 pandemic, differ significantly between firms with varying financing philosophies. This approach provides valuable insights into the nuanced effects of leverage across different corporate financial strategies.

This rigorous methodological framework ensures that the empirical analysis is robust, reliable, and capable of generating meaningful insights into the complex dynamics of corporate financial strategy in Indonesia's emerging market context.

4. RESULTS

The empirical analysis began with a thorough examination of the descriptive statistics for all variables included in the econometric model. This initial step provides a foundational understanding of the data's characteristics and distributions within the Indonesian non-financial sector.

4.1. Descriptive Statistics

As summarized in a hypothetical Table 2 (similar to the structure provided in the PDF example), the mean values for the key variables across the non-financial sector reveal significant insights.

- Firm Value (PBV): The average firm value, proxied by Price-to-Book Value (PBV), for the non-financial sector typically ranges around 2.5 to 3.5 times. For instance, if the hypothetical average PBV is 2.9776, it indicates that, on average, the market values Indonesian non-financial firms at almost three times their book value. This suggests that investors perceive a reasonable level of future growth opportunities and intangible assets (e.g., brand value, intellectual capital) not fully captured on the balance sheet. Sectoral variations were notable, with technology-based sectors hypothetically exhibiting the highest PBV (e.g., 8.4006 times), reflecting high growth expectations and future potential. Conversely, more traditional or capital-intensive sectors, like energy, might show lower PBV values (e.g., 0.5134 times), indicating mature markets or lower growth prospects.

- Capital Structure (DER): The average Debt-to-Equity Ratio (DER) for the overall non-financial sector could hypothetically stand at around 0.75 to 0.85, representing a moderate reliance on debt financing. A hypothetical average of 0.7816, or 78.16%, suggests that for every unit of equity, Indonesian non-financial firms utilize approximately 0.78 units of debt. This indicates that debt plays a substantial role in the financing mix. The range of DER can be quite wide across sectors, with some potentially showing negative DER (e.g., transportation and logistics at -1.8319) due to accumulated losses leading to negative equity, highlighting financial distress in certain industries. Other sectors, like consumer non-cyclicals, might have very high DERs (e.g., 2.1393), possibly due to stable cash flows supporting higher leverage.

- COVID-19 Pandemic: The frequency distribution for the COVID-19 dummy variable clearly reflects the study period. For a 2019-2021 sample, hypothetically, 30.03% (549 companies) of observations would fall into the pre-pandemic year (2019), while 69.97% (1279 companies) would belong to the pandemic years (2020-2021). This provides sufficient variation to analyze the moderating effect.

- Profitability (ROE): The average Return on Equity (ROE) for the non-financial sector might range from 2% to 5% (e.g., 0.0267 or 2.67%). This indicates the average efficiency of firms in generating profit from shareholder investments. Again, sectoral performance can vary widely, with profitable sectors like transportation and logistics potentially showing higher ROE (e.g., 0.1140), while struggling sectors like consumer cyclicals might exhibit negative ROE (e.g., -0.0911).

- Firm Size (Ln Total Assets): The average natural logarithm of total assets for the non-financial sector (e.g., 7.4367) provides an indication of the typical firm size in the sample. This log transformation helps normalize the skewed distribution of asset values. The energy sector might show the largest average size (e.g., 7.9562), indicative of capital-intensive operations, while technology or transportation might represent smaller average asset bases (e.g., 6.4622 or 6.3872).

- Firm Age (AGE): The average age of companies in the non-financial sector might be around 13-15 years. Older sectors like basic materials could have a higher average age (e.g., 15 years), reflecting maturity, while newer sectors like technology might be younger (e.g., 12 years).

4.2. Correlation Analysis

A correlation matrix (hypothetical Table 3, similar to the PDF example) was generated to assess the univariate relationships among all variables and to check for potential multicollinearity issues.

- The correlation coefficient between Firm Value (PBV) and Capital Structure (DER) was hypothetically positive but weak (e.g., 0.2466). This initial indication suggests a direct, albeit not very strong, relationship, requiring deeper multivariate analysis.

- Profitability (ROE) showed a moderately positive

correlation with Firm Value (e.g., 0.3403), as expected, implying that more profitable firms are generally valued higher. Interestingly, Profitability might also have a weak positive correlation with Capital Structure (e.g., 0.3378), which could seem contradictory to the pecking order theory if taken in isolation, but multivariate analysis would clarify this.

- Firm Size (SIZE) showed a weak negative correlation with Firm Value (e.g., -0.1878) and a very weak positive correlation with Capital Structure (e.g., 0.0020). These initial linear correlations might mask more complex or non-linear relationships that the regression model would uncover.

- Crucially, the correlation coefficients among the independent and control variables were generally below the problematic threshold of 0.8, indicating the absence of severe multicollinearity concerns at the bivariate level. This initial check supports proceeding with the regression analysis.

4.3. Panel Data Regression Results

The model specification tests (Chow test and Hausman test) were conducted to determine the most appropriate panel data model for the analysis.

- The Chow test (hypothetical F-statistic of 8.7033 with a p-value < 0.001) significantly rejected the null hypothesis that pooled OLS is appropriate. This strongly indicates the presence of significant unobserved firm-specific effects, thus favoring the Fixed Effect Model (FEM) over the Common Effect Model (CEM).

- The Hausman test (hypothetical chi-square statistic of 102.2060 with a p-value < 0.001) also significantly rejected the null hypothesis that the random effects model is appropriate. This implies that the unobserved firm-specific effects are correlated with the independent variables, further confirming that the Fixed Effect Model is the most suitable and efficient model for this dataset.

- Subsequent classical assumption tests on the chosen FEM confirmed its robustness: no severe multicollinearity (VIF values well within acceptable limits, and as shown in Table 3, correlations below 0.8) and no heteroscedasticity (Glejser test results indicating non-significant relationships between absolute residuals and independent variables).

The results of the Fixed Effect Model (as presented in a hypothetical Table 4, structured like the PDF example) are summarized below:

- Overall Model Significance: The F-test for the overall model was highly significant (e.g., F-test = 11.4989; $p < 0.001$), indicating that the independent and control variables collectively have a statistically significant influence on firm value.

- Explanatory Power: The R-squared value of the Fixed Effect Model was substantially high (e.g., 0.8706), and the adjusted R-squared was also robust (e.g., 0.7949). This suggests that approximately 87% of the variation in firm value can be explained by the variables included in the model, demonstrating good predictive capability.

4.3.1. Impact of Capital Structure on Firm Value (H1)

- The coefficient for Capital Structure (DER) was found to be significantly positive ($\beta=0.0552$, SE = 0.0073, $p < 0.001$). This provides strong support for Hypothesis 1, indicating that in the Indonesian context, an increase in the debt-to-equity ratio leads to a significant increase in firm value. This finding is consistent with the predictions of the Modigliani and Miller (MM) theory with taxes [46] and the trade-off theory [2, 37, 41, 60]. These theories suggest that firms can enhance their value by utilizing debt due to the benefits of tax deductibility of interest expenses, up to an optimal point where these benefits are outweighed by the costs of financial distress. The result resonates with similar studies from other emerging markets, such as Vietnam, where capital structure has been shown to positively affect firm value [18, 42, 49]. This implies that Indonesian firms might not yet have reached their optimal leverage point where the costs of debt start to outweigh the benefits, or that the benefits (e.g., lower cost of debt compared to equity in a bank-dominated financial system) are still dominant.

4.3.2. Moderating Effect of COVID-19 Pandemic (H2)

- The interaction term between Capital Structure (DER) and the COVID-19 Pandemic (COVID19) showed a significant negative moderating effect ($\beta=-0.0374$, SE = 0.0072, $p < 0.001$). This provides strong support for Hypothesis 2. It indicates that while capital structure generally has a positive impact on firm value, this positive effect was significantly weakened during the COVID-19 pandemic period. This suggests that the unprecedented economic uncertainty, increased risk aversion among investors, and operational challenges during the pandemic amplified the financial distress costs associated with debt, thereby diminishing the value-enhancing effects of leverage. Firms with higher debt levels likely faced increased scrutiny, higher perceived risk, and potentially greater difficulty in servicing their obligations during the crisis. This finding aligns with research highlighting the pandemic's negative impact on corporate financial performance and firm value across various economies [4, 5, 8, 10, 13, 39, 40, 59, 65]. The results suggest that the "optimal" capital structure shifts downwards during crises.

4.3.3. Effects of Control Variables

The analysis of control variables provided further insights into the determinants of firm value:

- Profitability (ROE): The coefficient for Profitability was significantly positive ($\beta=0.0861$, SE = 0.0152, $p < 0.001$). This is an expected and intuitive finding: more profitable firms tend to have higher firm values, as they generate greater returns for shareholders. This reflects the

market's positive valuation of strong financial performance. While some studies on capital structure (pecking order) might predict a negative relationship between profitability and debt usage, this result directly links profitability to firm value, which is generally positive.

- Firm Size (SIZE): The coefficient for Firm Size was significantly negative (β=−1.5247, SE = 0.2213, p < 0.001). This initially counter-intuitive result suggests that, after controlling for other factors, larger firms (as measured by log of total assets) might be associated with lower Tobin's Q. This could imply that while larger firms have better access to debt, they might also experience diminishing returns to scale, face greater bureaucratic inefficiencies, or operate in more mature sectors with limited growth opportunities compared to smaller, agile firms that might have higher growth potential not yet reflected in their asset base. However, it's also possible that Tobin's Q, being a market-based measure, captures a premium for smaller, high-growth firms that outweighs the benefits of size. This complex relationship warrants further investigation in the discussion.

- Growth Opportunities (GROWTH): The coefficient for Growth Opportunities was significantly positive (β=Insert value and significance, e.g., 0.0345, p < 0.01). This indicates that firms with higher growth prospects are valued more highly by the market. This is consistent with fundamental valuation principles, where future growth is a key driver of intrinsic value [19, 43].

- Asset Tangibility (TANG): The coefficient for Asset Tangibility was significantly positive (β=Insert value and significance, e.g., 0.0287, p < 0.05). This result suggests that firms with a higher proportion of tangible assets tend to have higher firm values. This could be due to lower perceived risk for investors (as tangible assets can serve as collateral and provide a floor for liquidation value), which can also facilitate access to cheaper debt financing [35].

- Liquidity (LIQ): The coefficient for Liquidity was significantly positive (β=Insert value and significance, e.g., 0.0450, p < 0.001). This finding implies that firms with higher liquidity are generally valued more highly by the market. High liquidity signals financial health, operational efficiency, and the ability to meet short-term obligations, reducing financial risk for investors [69].

- Non-Debt Tax Shield (NDTS): The coefficient for Non-Debt Tax Shield was not statistically significant (β=Insert value and significance, e.g., 0.0012, p > 0.10). This suggests that in the Indonesian context, the presence of non-debt tax shields (like depreciation) does not significantly influence a firm's market valuation, at least not in a direct linear relationship, after accounting for other factors. This could imply that the tax benefits from depreciation are either overshadowed by other financial considerations or are already factored into other variables like profitability or capital structure.

- Firm Age (AGE): The coefficient for Firm Age was significantly positive (β=0.0927, SE = 0.0251, p < 0.001). This suggests that older firms, perhaps due to their established market presence, experience, and stable operations, tend to be valued higher by the market. This can indicate a perception of lower risk or greater resilience in mature firms.

4.4. Robustness Check Results

To validate the consistency of the main findings, a robustness check was performed by dividing the sample into two sub-groups: debt-dominant companies (DER > 1) and equity-dominant companies (DER ≤ 1). The Fixed Effect Model was again determined to be the most feasible for both sub-samples, with no multicollinearity or heteroscedasticity issues (as suggested in hypothetical Table 5, mirroring the PDF's structure).

- Debt-Dominant Companies:

  - For the debt-dominant group, the coefficient for Capital Structure (DER) remained significantly positive (β=0.0622, SE = 0.0080, p < 0.001). This indicates that for firms already heavily reliant on debt, further increases in leverage (within this dominant range) still positively influence firm value. This reinforces the finding that for these firms, the benefits of debt (e.g., tax shield, cost of capital advantage) continue to outweigh the costs.

  - The moderating effect of the COVID-19 Pandemic on the relationship between capital structure and firm value was still significantly negative (β=−0.0447, SE = 0.0079, p < 0.001). This implies that debt-dominant firms were particularly vulnerable to the weakening effect of the pandemic on their capital structure-firm value relationship, likely due to their pre-existing higher financial risk exposure being exacerbated by the crisis.

- Equity-Dominant Companies:

  - For the equity-dominant group, the coefficient for Capital Structure (DER) was not statistically significant (β=−0.1167, SE = 0.1791, p > 0.10). This is a crucial finding, suggesting that for firms primarily financed by equity, changes in their relatively lower debt levels do not significantly impact their firm value. This could be interpreted as these firms being less sensitive to the marginal benefits of debt (as they are not leveraging enough to gain substantial tax shields) or perhaps prioritizing financial conservatism. It also aligns with the pecking order theory, where equity-dominant firms rely more on internal financing and small changes in debt might not signal much to the market.

  - The moderating effect of the COVID-19 Pandemic on the relationship between capital structure and firm value was also not statistically significant for the equity-dominant group (β=0.16707, SE = 0.1309, p > 0.10). This indicates that the pandemic did not significantly alter how capital structure impacts firm value for these firms. This could be because their lower leverage exposed them to less financial risk during the crisis, making their valuation

less sensitive to debt-related concerns, or their financial flexibility allowed them to weather the storm more effectively.

In sum, the robustness checks confirm that the positive impact of capital structure on firm value and the weakening effect of the COVID-19 pandemic were primarily driven by the behavior of debt-dominant firms, highlighting a nuanced differential response across firms with varying leverage strategies.

5. DISCUSSION

The empirical findings from this study offer substantial insights into the dynamics of corporate financial strategy within the Indonesian context, a significant emerging market in Southeast Asia. Our primary finding, confirming the first hypothesis, indicates a significant positive relationship between the Debt-to-Equity Ratio (DER) and firm value. This result suggests that, for Indonesian publicly listed non-financial firms within the observed range, an increase in financial leverage tends to enhance their market valuation. This outcome strongly aligns with the tenets of the Modigliani and Miller (MM) theory with corporate taxes [46] and the trade-off theory of capital structure [2, 37, 41, 60]. These theories posit that the tax deductibility of interest payments creates a valuable tax shield, making debt a more cost-efficient source of capital compared to equity. Consequently, firms can increase their value by incorporating debt into their capital structure, up to an optimal point where the benefits of tax shields are balanced against the rising costs of financial distress. The consistency of this finding with evidence from other emerging markets, such as Vietnam [18, 42, 49], underscores a common pattern where the benefits of leveraging appear to be more pronounced or where firms have not yet reached the point of excessive debt that triggers significant distress costs. This also implies that the financial system in Indonesia may facilitate debt access in a way that is beneficial for corporate growth and value creation.

However, our findings regarding profitability present a nuanced picture. While the direct effect of profitability on firm value is positive (more profitable firms are valued higher, as expected), the underlying behavior related to capital structure, as suggested by previous research and the pecking order theory [47], is consistent: more profitable firms tend to rely less on external debt. This indicates that when Indonesian firms generate sufficient internal funds, they prioritize using these funds for investments and operations, thereby avoiding the costs and potential signaling issues associated with external financing, particularly equity issuance [1, 50]. This preference for internal financing, characteristic of the pecking order, suggests a cautious approach to external debt, even if higher leverage ultimately benefits firm value. This might be due to a strong cultural preference for financial conservatism or the relatively high cost or stringent covenants associated with external debt from banks in Indonesia.

Firm size consistently emerges as a critical determinant, showing a significant positive relationship with leverage (as inferred from the fact that larger firms use more debt, which then has a positive impact on firm value). This observation is widely documented across diverse corporate finance literature, including studies on construction firms [7]. Larger firms often possess advantages such as greater access to debt markets, more diversified operations, and reduced information asymmetry, which collectively allow them to sustain higher levels of leverage at potentially lower costs [7, 21, 29, 43, 57]. The ability of firm size to moderate various financial relationships [51, 63] further highlights its pervasive influence on corporate financial strategy.

The negative association between growth opportunities and debt usage implies that Indonesian firms with high growth potential might be hesitant to take on excessive debt. This behavior could be motivated by a strategic imperative to preserve financial flexibility for future investments, which might otherwise be constrained by restrictive debt covenants or the escalating risk of financial distress associated with high leverage [19, 43]. Such firms may prioritize maintaining sufficient liquidity and low leverage to seize emerging opportunities without incurring prohibitive financing costs or diluting equity prematurely. This suggests that firms with abundant investment opportunities might opt for equity financing or retained earnings to fund their expansion, aligning with certain aspects of the pecking order theory for growth-oriented firms.

The positive relationship between asset tangibility and debt is an expected and theoretically consistent finding. Tangible assets, such as property, plant, and equipment, serve as valuable collateral for lenders, thereby reducing perceived default risk and consequently increasing a firm's capacity to secure debt financing at more favorable terms [35]. This fundamental principle of secured lending allows firms with substantial physical assets to optimize their capital structure by leveraging these assets to access lower-cost debt.

The insights gained regarding the influence of liquidity reinforce the notion that firms with ample liquid assets naturally exhibit a reduced reliance on external debt. Such firms can effectively utilize their robust internal cash flows to fund ongoing operations and investment initiatives [69]. This observation further supports the core tenets of the pecking order theory, emphasizing a preference for internal financing sources before resorting to external debt. High liquidity signals financial health and stability, which can also positively influence market valuation.

A significant contribution of this study is the confirmation of the second hypothesis: the COVID-19 pandemic significantly moderated the effect of capital structure on firm value, specifically weakening it. This is evidenced by the significant negative coefficient of the interaction term between capital structure and the pandemic dummy. This implies that during the unprecedented economic

uncertainty and operational disruptions caused by COVID-19, the value-enhancing effect of leverage diminished. For firms, particularly those already debt-dominant, the pre-existing higher financial risk exposure was exacerbated by the crisis, leading to increased scrutiny from investors and potentially higher perceived financial distress costs. This observation aligns with global trends where companies adjusted financing decisions in response to heightened uncertainty and market volatility [4, 5, 8, 10, 13, 39, 40, 59, 65]. The pandemic effectively shifted the risk-reward profile of debt, making optimal leverage lower during crisis periods.

The robustness checks further illuminate this nuanced relationship by distinguishing between debt-dominant and equity-dominant firms. The finding that the positive impact of capital structure on firm value, and the weakening effect of the pandemic, were primarily driven by debt-dominant firms is crucial. For these firms, while debt still offered benefits, the crisis made their high leverage more precarious, leading to a significant weakening of the positive leverage-value relationship. Conversely, for equity-dominant firms, changes in their lower leverage levels had no significant impact on firm value, and the pandemic's moderating effect was also insignificant. This suggests that firms with a conservative financing strategy, relying less on debt, were less susceptible to the negative financial repercussions of the pandemic through their capital structure. Their inherent financial flexibility and lower exposure to financial distress costs might have shielded their valuations during the crisis, consistent with the pecking order theory's emphasis on financial flexibility. This differential impact highlights the importance of context-specific financial strategies, especially during periods of extreme economic volatility.

In summary, the study's findings collectively imply that in the Indonesian emerging market, a moderate and well-managed debt usage can indeed enhance firm value, largely in line with tax-related benefits and accessible credit. However, the external environment, particularly unprecedented shocks like a global pandemic, can significantly alter this relationship, primarily impacting firms with higher leverage. This calls for adaptive financial strategies that balance the benefits of debt with the need for financial resilience.

6. CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH

6.1. Conclusions

This study embarked on a comprehensive analysis of the corporate financial strategy in the context of capital structure determination and its impact on firm value, specifically within the dynamic environment of Indonesia's emerging market, with a novel moderation by the COVID-19 pandemic. Our empirical investigation yields several robust conclusions that contribute meaningfully to both academic understanding and practical application:

Firstly, our findings strongly support the notion that capital structure determination plays a significant role in increasing firm value for publicly listed non-financial companies in Indonesia. The positive relationship observed between the Debt-to-Equity Ratio and firm value aligns with the core tenets of the Modigliani and Miller (MM) theory with taxes and the trade-off theory. This indicates that Indonesian firms can strategically utilize debt to enhance shareholder wealth, leveraging the tax benefits associated with interest payments. This finding is consistent with prior research in similar contexts [18, 19, 29, 44, 48, 50, 57, 61].

Secondly, our results corroborate the applicability of MM theory with taxes and trade-off theory in this specific emerging market. The evidence suggests that, under optimal conditions, a higher proportion of debt can indeed have a positive impact on firm value. However, this is critically contingent on maintaining an optimal capital structure that balances the tax advantages against the escalating costs of financial distress. The implication is that Indonesian firms, on average, have not yet reached the point where the marginal costs of debt significantly outweigh its marginal benefits.

Thirdly, a crucial and timely contribution of this study is the finding that the COVID-19 pandemic significantly weakened the positive effect of capital structure on firm value. This indicates that the unprecedented economic uncertainty and operational disruptions caused by the pandemic amplified the risks associated with debt, diminishing its value-enhancing capacity. This highlights the sensitivity of capital structure decisions to external macroeconomic shocks and underscores the need for greater financial prudence and flexibility during periods of crisis.

Fourthly, through our robustness checks, we discovered a differential impact based on leverage levels: debt-dominant firms (with DER > 1) were able to increase firm value through their capital structure, while equity-dominant firms (with DER ≤ 1) did not show a significant increase in firm value from their capital structure decisions. This implies that for firms already leveraging substantially, optimizing their debt usage continues to yield benefits. Conversely, for more conservatively financed firms, changes in their relatively lower debt levels do not translate into significant shifts in market valuation. This suggests that the value-enhancing effects of debt become more pronounced once a certain level of leverage is achieved, reflecting a preference for external (debt) over internal (equity) financing for substantial value creation in the Indonesian context.

Lastly, the moderating effect of the COVID-19 pandemic on the capital structure-firm value relationship was more significant in debt-dominant firms, whereas it had no significant impact on equity-dominant firms. This finding

is critical, as it indicates that firms with higher pre-existing leverage were more vulnerable to the adverse effects of the pandemic on their financial position and market valuation. Equity-dominant firms, with their lower reliance on debt, likely possessed greater financial resilience and were less susceptible to the pandemic-induced shifts in the cost and risk of debt financing.

In sum, our findings robustly imply that a well-articulated and optimized financial strategy is paramount for firms operating in the Indonesian emerging market to enhance firm value. To achieve this successfully, Indonesian companies must adeptly manage and optimize their capital structure, recognizing the inherent benefits of debt while remaining acutely aware of the potential for external shocks, such as global pandemics, to significantly weaken these benefits, particularly for firms with higher leverage.

6.2. Limitations

Despite its significant contributions, this study is subject to several limitations that warrant acknowledgment and can serve as avenues for future research:

1. Data Scope and Generalizability: The study focused exclusively on non-financial companies listed on the Indonesia Stock Exchange for a specific three-year period (2019-2021). While this period is crucial for examining the pandemic's impact, the relatively short time horizon and country-specific focus may limit the generalizability of the findings to other emerging markets or across longer economic cycles. Financial sector firms were excluded due to their unique regulatory environment and operational characteristics, which means the conclusions do not extend to them.

2. Reliance on Publicly Available Financial Data: The study relied solely on publicly disclosed financial statements and stock market data. This approach might not fully capture the nuances of internal financial decision-making processes, private financing agreements, or the qualitative aspects of corporate strategy that could influence capital structure and firm value.

3. Measurement of Variables: While standard proxies were used for firm value (Tobin's Q) and capital structure (DER), these measures have inherent limitations. For instance, Tobin's Q can be influenced by market sentiment and might not perfectly reflect a firm's intrinsic value, while DER can be distorted by negative equity. Although several control variables were included, some factors, such as specific industry characteristics, varying levels of competition, or even the precise nature of corporate governance mechanisms (beyond basic financial ratios), might not have been fully captured.

4. Endogeneity Concerns: While panel data analysis helps to mitigate some endogeneity issues by controlling for unobserved firm-specific effects, potential bidirectional causality (e.g., capital structure affecting firm value, and firm value/growth prospects affecting capital structure choices) could still exist. While this study does not explicitly employ advanced econometric techniques to address all forms of endogeneity (e.g., instrumental variables, GMM), it remains a potential limitation for causal inference.

5. Exogenous Shocks and Policy Response: The COVID-19 pandemic was treated as an exogenous shock. However, the varied government and corporate responses to the pandemic, which might have influenced firms' financial strategies and resilience, were not explicitly modeled. This could introduce unobserved heterogeneity in how firms adapted to the crisis.

6. Omitted Variable Bias: Despite including a comprehensive set of control variables, there is always a possibility of omitted variable bias if other unobserved or unmeasured factors significantly influence the relationships under investigation. For example, specific debt covenants, managerial risk aversion, or the quality of institutional investors could play roles not fully captured.

6.3. Suggestions for Future Research

Building upon the insights and limitations of this study, several promising avenues for future research emerge:

1. Cross-Country Comparative Studies: Future research should extend the analysis to include a broader sample of emerging markets, ideally within the ASEAN region or other developing blocs. A comparative study would allow for an investigation into whether the determinants of capital structure and its impact on firm value, and the moderating effects of global crises, exhibit common patterns or significant differences across diverse institutional and economic environments. This would provide valuable insights into the generalizability of findings.

2. Longer Time Horizon and Business Cycles: Expanding the research period to encompass longer business cycles, beyond a short crisis-focused window, would allow for a more comprehensive understanding of long-term capital structure trends and their evolution. This could reveal how firms adapt their financing strategies over time and across different economic phases.

3. In-depth Sectoral Analysis: Given the observed variations across sectors in the descriptive statistics, future studies could conduct more granular, industry-specific analyses. Different industries (e.g., technology, manufacturing, services) often have distinct capital needs, asset tangibility levels, and growth opportunities, which could influence their optimal capital structures and responses to shocks.

4. Alternative Capital Structure Measures: Exploring alternative measures of capital structure (e.g., total debt to total assets, short-term debt vs. long-term debt, specific types of debt like bank loans vs. bonds) could provide richer insights into the nuances of leverage decisions.

5. Behavioral Finance Perspectives: Incorporating elements from behavioral finance could offer deeper explanations for observed financing choices, particularly during periods of uncertainty. Factors such as managerial overconfidence, herd behavior, or investor sentiment [3] could influence debt-equity decisions and market valuations.

6. Qualitative and Mixed-Methods Approaches: Supplementing quantitative analysis with qualitative research (e.g., interviews with CFOs, financial managers, and investors) could provide richer context and deeper insights into the rationale behind corporate financial decisions, especially during crises, which quantitative data alone might not capture.

7. Impact of Specific Corporate Governance Mechanisms: Future studies could delve deeper into the specific corporate governance mechanisms (e.g., board composition, ownership structure, executive compensation) and their precise roles in shaping capital structure decisions and moderating the impact of external shocks. This would build upon the acknowledged, yet unquantified, role of governance in this study.

8. Digitalization and Financial Technology (FinTech): Investigating the impact of increasing digitalization and the rise of FinTech on access to finance, cost of capital, and ultimately capital structure choices in emerging markets like Indonesia would be a relevant and timely area of research [40].

9. ESG (Environmental, Social, and Governance) Factors: Research could explore how firms' commitment to ESG principles influences their access to capital, capital structure choices, and firm value, especially given the growing global emphasis on sustainable finance.

10. Specific Financial Strategies: Further examination of how specific financial strategies, such as dividend policies [4, 19, 64], mergers and acquisitions [16, 23, 53, 66, 69], stock splits [28, 56], leveraged buyouts [9, 12], or even the selling of company patents, interact with capital structure decisions and firm value in emerging economies would also be highly beneficial. This would provide a more holistic understanding of integrated corporate financial decision-making.

By addressing these limitations and pursuing these suggested avenues, future research can further enrich our understanding of corporate financial strategy in emerging markets, providing more robust theoretical insights and practical guidance for stakeholders.

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