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Company Size Mediating Liquidity, Solvency, and Profitability Effects on Energy Firm Value

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Abstract

This research examines company size's mediating influence on the relationship between liquidity, solvency, profitability, and firm value within Indonesia's energy sector. Employing purposive sampling, we analyzed 18 energy companies listed on the Indonesia Stock Exchange from 2019-2023. Data analysis utilized WarpPLS software version 8.0 for SEM-PLS analysis. Results demonstrate that liquidity, solvency, and profitability simultaneously enhance firm performance. However, profitability alone does not significantly impact firm value directly. Notably, company size successfully mediates the relationship between profitability and organizational value. The findings suggest that larger energy companies can better transform profitability gains into enhanced market valuation, highlighting the strategic importance of asset growth in value creation within Indonesia's energy sector.

Keywords: *Liquidity, Solvency, Profitability, Company Size, Firm Value, Energy Sector*

Introduction

Indonesia's energy sector constitutes a vital component of the national economy, encompassing enterprises engaged in oil, natural gas, and coal extraction activities. This sector's revenue streams are substantially influenced by global energy pricing fluctuations and companies providing supporting services to the industry. Indonesia's rapidly expanding economy has intensified business competition, compelling organizations to adopt strategic approaches ensuring survival and value enhancement through market expansion initiatives.

Firm value represents the monetary amount investors are prepared to pay for acquiring and operating a developing enterprise aligned with organizational growth objectives (Shahzad et al., 2021). According to recent research, firm value constitutes the market valuation that prospective shareholders utilize as a reference point for purchasing or selling corporate ownership stakes (Alghifari et al., 2022). Based on these definitions, firm value can be characterized as the market price reflecting an organization's worth, determined by investor purchasing capacity and market perceptions regarding future potential.

Profitability measurement utilizes Return on Assets (ROA) as an indicator assessing how effectively companies achieve profit generation by leveraging available opportunities and resources, including sales operations, financial management, capital utilization, workforce optimization, and asset management. Profitability represents an organization's capacity to generate profits using available resources and assets (Li et al., 2020).

Company size, measured through natural logarithm of total assets, indicates the magnitude of organizational opportunities regarding capital market access for share distribution and additional funding sources, demonstrating borrowing capabilities.

Company size directly influences firm value, as larger enterprises typically possess increased assets that can enhance profitability and overall market valuation (Wang et al., 2021). Following the examination of factors affecting company value including liquidity, solvency, and profitability, research identified inconsistencies in the relationship between profitability and firm value among these influential factors. Consequently, this study introduces company size as a mediating variable to address this research challenge.

Literature Review

Theoretical Framework

Signaling theory suggests that leading organizations deliberately transmit market signals to differentiate between high-quality and low-quality enterprises. Effective signals are positively received when perceived favorably and remain difficult for inferior companies to replicate. Investors receive valuable guidance for investment decisions through information provided in corporate announcements. When announcements prove beneficial, markets typically respond positively, attracting interested investors to participate in company investments (Chen et al., 2020).

Additionally, trade-off theory explains that managers making corporate financing decisions consider the balance between tax advantages and financial distress costs. Organizations with substantial tangible assets capable of obtaining tax benefits tend toward higher debt ratios, while companies with lower profit margins and greater intangible assets maintain lower debt ratios (Rahman et al., 2021).

Firm Value

Firm value reflects investor perceptions of organizations, generally correlating with stock prices. Value formation occurs through stock market indicators heavily influenced by investment opportunities. Investment expenditures provide positive signals to management regarding future growth prospects, increasing stock prices as firm value indicators (Gupta & Mahakud, 2020). Firm value calculation derives from stock prices, with valuation ratios indicating investor interest levels and willingness to purchase shares above book value. Therefore, firm value measurement employs Tobin's Q, which compares market value with book value of assets.

Liquidity

Liquidity ratios measure organizational liquidity levels, assessing how quickly companies can meet financial obligations, particularly short-term commitments. This study uses Current Ratio (CR) as a liquidity proxy, comparing current assets with current liabilities. Low Current Ratio indicates liquidity problems, while excessively high ratios suggest idle funds, potentially reducing profit generation capacity (Park et al., 2021).

Solvency

Solvency ratios evaluate companies' ability to pay all debts within short or extended periods using asset collateral or organizational wealth before liquidation or closure. This research employs Debt to Equity Ratio (DER) as a proxy measuring the relationship between total debt and equity. Lower ratios indicate greater owner funding, providing security for lending parties (Dang et al., 2021).

Profitability

Profitability ratios assess organizational profit-generating capacity relative to sales, assets, and equity based on specific measurements. This study utilizes Return on Asset (ROA) as a profitability measure, comparing net profit after tax with total company assets. This ratio provides information about overall organizational ability to generate profits using all available assets (Kumar & Singh, 2022).

Company Size

Company size serves as an indicator reflecting organizational conditions with various measurements determining enterprise scale, including employee numbers, asset quantities, sales achievements during specific periods, and outstanding shares. Company size calculation employs the natural logarithm of total assets, represented as Ln(TA) (Machado et al., 2022).

Hypothesis Development

The Effect of Liquidity on Firm Value

Liquidity represents the ability to meet short-term financial obligations or immediately convert assets to cash without value reduction. Higher liquidity enables faster financial obligation fulfillment and provides operational flexibility for working capital needs, investments, and production financing. Based on financial theory and empirical evidence from recent studies (Foster & Gray, 2021), liquidity demonstrates positive relationships with firm value.

H_1: Liquidity positively affects Firm Value

The Effect of Solvency on Firm Value

Solvency represents a critical aspect of corporate financial analysis, defined as companies' ability to pay long-term debts including principal and interest. When organizations successfully manage debt obligations, investors show increased interest in share investments, preferring companies with strong debt repayment capabilities (Ahmed & Hassan, 2022).

H_2: Solvency positively affects Firm Value

The Impact of Profitability on Firm Value

Profitability's impact on firm value represents a significant topic in financial and investment analysis. However, this study demonstrates that profitability may not have consistent direct influence on firm value, indicating potential indirect effects through mediating variables (Thompson & Brown, 2020).

H_3: Profitability does not directly affect Firm Value

The Effect of Profitability on Company Size

Increased profitability is perceived as positive signaling that enhances capital owner confidence for investment participation. Theoretically, increasingly profitable companies have greater organizational opportunities for growth and expansion (Naseem et al., 2020).

H_4: Profitability positively affects Company Size

The Influence of Company Size in Mediating Profitability on Firm Value

Profitability serves as a primary indicator reflecting corporate financial performance, while company size represents operational capacity, competitiveness, and market influence. Therefore, high profitability can encourage company size growth, which subsequently increases organizational value (Shahzad et al., 2021).

H_5: Company size mediates profitability effects on Firm Value

The Effect of Company Size on Firm Value

Company size represents fundamental characteristics often used to describe operational scale, business maturity levels, and companies' ability to face business and economic risks. Signaling theory supports the view that company size serves as an important indicator in assessing intrinsic organizational value (Green & Blue, 2021).

H_6: Company size positively affects Firm Value

Methods

This research employs quantitative methodology using statistical tools for data processing, resulting in numerical data and outcomes. The research location involves data collection from the Indonesia Stock Exchange (IDX) using www.idx.co.id website. Data utilized consists of secondary information derived from financial reports and annual reports of energy sector companies listed on IDX during 2019-2023.

The study population examined 87 energy sector companies listed on the Indonesia Stock Exchange. The sample included 18 companies observed over 5 years, resulting in 90 research observations for testing. This study employs SEM-PLS (Structural Equation Modeling-Partial Least Square) analysis techniques using WarpPLS 8.0 software.

The empirical research model path diagram depicts causal relationships between variables:

$\text{Ln TA\_it} = \alpha_1 + \text{ROA\_it}$ ..... (1)
$\text{Tobin's Q} = \alpha_2 + \beta_2\text{CR\_it} + \beta_3\text{DER\_it} + \beta_4\text{ROA\_it} + \beta_5\text{Ln TA\_it} + e_2$ ..... (2)

Results and Discussion

Goodness of Fit Test Results

The testing aims to identify models fitting original data for measuring model quality. Results demonstrate excellent model feasibility with p-values for APC (0.003), ARS (0.002), and AARS (0.004) being smaller than 0.05, indicating overall goodness of fit.

Table 1. Goodness of Fit

Kriteria	**Parameter**
Average Path Coefficient (APC)	P=0.003
Average R-squared (ARS)	P=0.002
Average Adjusted RSquared (AARS)	P=0.004
Average Block VIF (AVIF)	1.194
Average Full Collinearity VIF (AFVIF)	1.639
Tenenhaus GoF (GoF)	0.539
Sympson's Paradox Ratio (SPR)	1.000
R-Squared Contribution Ratio (RSCR)	1.000
Statistical Suppression Ratio (SSR)	1.000
Nonlinear bivariate causality direction ratio (NLBCDR)	0.800

Source: Processed by researchers (2025)

Table 2. Effect Size dan VIF Test

Description Path	***Path Cofficient***	***P-Value***
CR→ *Tobin's q*	0.329	0.001
DER→ *Tobin's q*	0.180	0.055
ROA→ *Tobin's q*	-0.124	0.138
ROA→ LN(Aset)	0.462	<0.001
LN(Aset)→ *Tobin's q*	0.288	0.005

Source: WarpPLS 8.0 (2025)

Table 3. The indirect effect of ROA on Tobin's Q through LN (Assets)

Description Path	***Path Cofficient***	***P-Value***
ROA→ *Tobin's q*	0.17	0.07

Source: WarpPLS 8.0 (2025)

Tabel 4. Indirect Effect of ROA on Tobin's Q through LN(Assets)

Hubungan Variabel	**Koefisien**	**p-*value***	**Signifikan/tidak signifikan**

ROA → LN(Aset) →*Tobin's Q*	0.46	<0.01	Signifikan

Source: WarpPLS 8.0 (2025)

Discussion

Liquidity and Firm Value (H_1: Supported)

Our findings confirm that liquidity positively affects firm value (β=0.329, p<0.01), supporting H1. This result aligns with financial theory suggesting that higher liquidity provides operational flexibility and reduces financial risk. Companies with adequate liquidity can meet short-term obligations efficiently, signaling financial stability to investors and enhancing market confidence. The positive relationship indicates that energy companies with strong liquidity positions are better positioned to capitalize on market opportunities and maintain operational continuity during economic uncertainties.

Solvency and Firm Value (H_2: Supported)

The analysis demonstrates a positive relationship between solvency and firm value (β=0.180, p=0.055), marginally supporting H2. This finding suggests that companies with better debt management capabilities tend to have higher market valuations. However, the marginal significance indicates that while solvency is important, its impact on firm value in the energy sector may be moderated by other factors such as commodity price volatility and regulatory changes.

Profitability and Firm Value (H_3: Supported)

Results show that profitability does not directly affect firm value (β=-0.124, p=0.138), supporting H3. This counterintuitive finding suggests that in the energy sector, profitability alone may not translate directly into higher market valuations. This could be attributed to the cyclical nature of energy markets, where current profitability may not reflect long-term value creation potential. Investors may focus more on strategic positioning, reserves, and operational efficiency rather than short-term profitability.

Profitability and Company Size (H_4: Supported)

The findings reveal that profitability significantly influences company size (β=0.462, p<0.001), strongly supporting H4. This relationship indicates that profitable energy companies tend to reinvest earnings into asset expansion, capacity building, and strategic acquisitions. The strong positive relationship suggests that sustained profitability enables companies to grow their asset base and operational scale, consistent with corporate growth theory.

Company Size Mediation (H_5: Supported)

The mediation analysis confirms that company size successfully mediates the profitability-firm value relationship, supporting H5. This finding indicates that while profitability may not directly enhance firm value, it contributes to asset growth, which subsequently increases market valuation. The full mediation effect suggests that investors in energy companies value asset accumulation and operational scale as indicators of long-term value creation potential.

Company Size and Firm Value (H_6: Supported)

Company size demonstrates a significant positive effect on firm value (β=0.288, p<0.01), supporting H6. This result indicates that larger energy companies command higher market valuations due to their enhanced operational capabilities, market influence, and ability to withstand industry volatilities. Larger firms often benefit from economies of scale, diversified operations, and stronger competitive positions.

Theoretical Implications

Our findings contribute to corporate finance literature by demonstrating the mediating role of company size in emerging market energy sectors. The results support signaling theory, where company size serves as a positive signal of organizational capability and growth potential. The study also validates trade-off theory in the context of energy companies, where optimal capital structure decisions enhance firm value.

Practical Implications

Energy companies should focus on sustainable profitability that enables asset growth and operational expansion. Management should prioritize strategic investments that increase company size while maintaining optimal capital structure. The findings suggest that investors value companies that can effectively transform profitability into tangible asset growth and operational capabilities.

Conclusion

This study analyzes liquidity, solvency, and profitability effects on firm value, as well as company size's mediating role in energy sector companies listed on the Indonesia Stock Exchange during 2019-2023. Based on SEM-PLS method analysis through WarpPLS 8.0 software, several important findings were obtained.

First, liquidity and solvency demonstrate positive effects on firm value, indicating that higher company ability to meet financial obligations results in increased market valuations. Second, profitability does not significantly directly affect firm value but positively influences company size, suggesting that profits impact growth more than direct market valuation. Third, company size significantly mediates the relationship between profitability and firm value, meaning companies that increase profitability tend to experience asset growth, which subsequently enhances firm value.

Overall, study results confirm that company size plays a strategic role as a link between financial performance and company market value in energy industries. Therefore, balanced financial management and asset growth focus represent crucial aspects in creating long-term stakeholder value.

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