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CAPITAL STRUCTURE, COMPANY SIZE, AND FINANCIAL PERFORMANCE: A STUDY OF ENERGY SECTOR ISSUERS ON THE IDX 2020–2024

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ABSTRACT

This study investigates the influence of capital structure and firm size on the financial performance of energy sector companies listed on the Indonesia Stock Exchange (IDX) during 2020–2024. Employing a quantitative causal–associative design, the research utilizes secondary data from audited annual reports, with purposive sampling applied to select firms that consistently disclosed complete financial information. Capital structure was measured using the Debt-to-Equity Ratio (DER), firm size was proxied by total assets, and financial performance was represented by Return on Equity (ROE). Data analysis was conducted using multiple linear regression, supported by classical assumption tests, coefficient of determination (R^2), and significance testing (F-test and t-test). The results reveal that DER has a significant positive effect on ROE, supporting the Trade-Off Theory and Modigliani–Miller framework that highlight the role of optimal leverage in enhancing firm value. Firm size also exerts a significant positive effect on ROE, consistent with the Economies of Scale perspective, which suggests that larger firms benefit from resource efficiency, broader market access, and greater financial resilience. Furthermore, the joint effect of DER and firm size demonstrates a significant influence on financial performance, indicating that the strategic balance between capital structure and business scale strengthens competitiveness and profitability in the energy sector. These findings provide theoretical reinforcement and empirical evidence that both financial leverage and firm scale are critical determinants of sustainable corporate performance in capital-intensive industries policy.

Keywords: Capital Structure, Firm Size, Financial Performance, Energy Sector, Indonesia Stock Exchange

INTRODUCTION

The energy sector plays a pivotal role in national economic development, serving not only as a major contributor to Indonesia's Gross Domestic Product (GDP) but also as a cornerstone of long-term energy security (BPS, 2023). Indonesia is endowed with abundant energy resources ranging from conventional sources such as oil, natural gas, and coal to renewable resources including geothermal, solar, and bioenergy. The sector's contribution extends beyond domestic economic growth, influencing macroeconomic stability and global trade given the strategic role of energy in international investment and competitiveness (IEA, 2022). Nevertheless, the global energy industry faces increasingly complex challenges. Price volatility, geopolitical uncertainty, and the accelerating demand for low-carbon energy transitions have pressured energy companies worldwide to adapt. Indonesia's commitment to achieving net-zero emissions by 2060 further intensifies the urgency for firms to redesign business models and financing strategies to remain competitive in dynamic markets (World Bank, 2023).

Within this context, financial performance emerges as a fundamental indicator reflecting the efficiency, profitability, and resilience of energy companies in navigating global uncertainties. Corporate finance literature highlights capital structure and firm size as two key determinants of financial performance. Capital structure, defined as the proportion of debt and equity financing, directly influences cost of capital, financial risk, and ultimately firm value. The trade-off theory argues that firms must balance the tax benefits of debt against the risk of financial distress (Brigham & Houston, 2022), whereas the pecking order theory emphasizes a financing hierarchy in which retained earnings are prioritized over debt and external equity (Myers & Majluf, 1984). Meanwhile, firm size is often associated with economies of scale, bargaining power, easier access to external funding, and greater risk absorption capacity (Sartono, 2019). However, large-scale firms may also encounter inefficiencies due to bureaucratic complexity and managerial rigidity.

Empirical evidence has produced mixed findings regarding these relationships. Some studies suggest that leverage positively affects profitability (Almazari, 2013), while others report a negative association between debt and financial performance (Suaryana, 2020). Similarly, firm size does not always guarantee higher profitability, as inefficiencies may offset the benefits of scale (Prasetyorini & Anggraini, 2018). These inconsistent findings highlight a research gap that warrants further exploration, particularly within Indonesia's energy sector, which is characterized by capital-intensive operations, long investment cycles, and high sensitivity to energy price fluctuations. Against this background, the present study investigates the impact of capital structure and firm size on financial performance in energy companies listed on the Indonesia Stock Exchange (IDX) over the 2020–2024 period. This timeframe is significant as it covers both the downturn caused by the COVID-19 pandemic and the subsequent recovery marked by rising energy prices and accelerated renewable energy investment. Practically, the findings are expected to provide strategic insights for corporate managers and investors in optimizing financial decision-making.

RESEARCH METHODS

RESULTS AND DISCUSSION

This study analyzes the influence of capital structure and company size on financial performance in the energy sector listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period using purposive sampling of five companies: ADRO, PGAS, GEMS, MEDC, and PTBA. Sample selection was based on the criteria of being actively listed during the observation period, having complete audited financial reports, and consistent presentation of research variable data. The variables used include the Debt to Equity Ratio (DER) as a proxy for capital structure, the Z-score (natural logarithm of total assets) as an indicator of company size, and Return on Equity (ROE) as an indicator of financial performance. By observing each company for five years, this study produced a total of 25 observational data sets for further analysis. Prior to hypothesis testing, a series of diagnostic tests were conducted to ensure the validity and reliability of the regression model. The normality test using the Kolmogorov-Smirnov method yielded a significance value of 0.136 (>0.05), indicating that the residuals were normally distributed. This confirms that the model meets the assumption of normality, thus supporting the robustness of the statistical estimates. Furthermore, the multicollinearity test showed a tolerance value of 0.664 and a VIF value of 1.235 for all independent variables, both within acceptable limits (Tolerance >0.10, VIF <10). These results indicate no multicollinearity issues, ensuring that each independent variable contributes uniquely to the model.

Furthermore, heteroscedasticity was examined using a scatterplot of standardized residuals, which showed a random distribution of points with no clear pattern, confirming the absence of heteroscedasticity. Overall, the results of these diagnostic tests indicate that the regression model meets the assumptions of normality, independence, and homoscedasticity. Therefore, this model is considered statistically reliable and suitable for further hypothesis testing, thus providing confidence in the accuracy and validity of subsequent regression analysis.

Multiple Linear Regression Equation

A multiple linear regression test was conducted to determine the simultaneous and partial effects of the independent variables DER (Debt to Equity Ratio) and Z on the dependent variable ROE (Return on Equity). Based on the output from Table 4.4, the following results were obtained:

Table: Results of the Multiple Linear Regression Test

Coefficients[a]				
Model	**Unstandardized Coefficients**	**Standardized Coefficients**	**t**	**Sig.**

		B	Std. Error	Beta		
1	(Constant)	1.347	.568		2.357	.026
	DER	.152	.046	.556	3.245	.006
	Z	.052	.018	.434	2.618	.017
a. Dependent Variable: ROE						

Based on the results of the multiple linear regression analysis in Table 4.4, the following regression equation was obtained:

$$ROE=1{,}347 + 0{,}152DER + 0{,}052Z + \varepsilon$$

The results of the multiple linear regression test indicate that this research model is suitable for analyzing the effect of the Debt to Equity Ratio (DER) and company size (Z) on Return on Equity (ROE). A constant value of 1.347 with a significance level of 0.026 (<0.05) indicates that when DER and Z are zero, the ROE of energy sector companies listed on the IDX in 2020–2024 is estimated to be positive and significant at 1.347. The DER variable has a positive coefficient of 0.152 with a significance level of 0.006 (<0.05). This means that each one-unit increase in DER increases ROE by 0.152 units, and this effect is statistically significant. Therefore, the higher the proportion of a company's funding sourced from debt to equity, the greater the company's ability to generate returns for shareholders.

Furthermore, the company size variable (Z) also showed a positive coefficient of 0.052 with a significance level of 0.017 (<0.05). This means that every one-unit increase in company size will increase ROE by 0.052 units, a significant effect. This indicates that larger companies tend to have better access to resources and operational efficiency, thus improving their financial performance.

F Test (Simultaneous)

The F test is conducted to determine whether the independent variables simultaneously (together) have a significant effect on the dependent variable. In this study, the independent variables are DER (Debt to Equity Ratio) and Z, while the dependent variable is ROE (Return on Equity).

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.446	2	.223	7.324	.006[b]

	Residual	.685	22	.031		
	Total	1.131	24			
a. Dependent Variable: ROE						
b. Predictors: (Constant), Z, DER						

Based on the F-test results, the regression model shows a significance value of 0.006, which is smaller than 0.05. This confirms that the independent variables Debt to Equity Ratio (DER) and Company Size (Z) simultaneously have a significant effect on Return on Equity (ROE). The calculated F-value of 7.324 with certain degrees of freedom confirms that variations in ROE can be explained meaningfully by these two variables, so the null hypothesis is rejected. Thus, the results of this study prove that capital structure and company size together play an important role in determining financial performance, especially in food and beverage companies listed on the Indonesia Stock Exchange for the 2020–2024 period.

Results of the Coefficient of Determination test

The coefficient of determination (R Square) serves to show the extent to which variations in the dependent variable ROE (Return on Equity) can be explained by variations in the independent variables DER and company size (Z) in the applied multiple linear regression model.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.526[a]	.391	.373	.17571

The results of the determination coefficient test in Table 4.5 show an R Square value of 0.394, which indicates that the independent variables Debt to Equity Ratio (DER) and company size (Z) are able to explain 39.4% of the variation in Return on Equity (ROE). The Adjusted R Square value of 0.373 confirms that after adjusting for the number of variables and sample size, this model can still explain 37.3% of the variation in ROE accurately, so it can be said that the regression model used has a moderate level of predictive ability. The remaining 52.6% is influenced by other variables outside the model, such as operational profitability, cost efficiency, level of industry competition, and external factors such as inflation and fiscal policy that are not included in this study.

Discussion

The Effect of Capital Structure on Financial Performance

The results of this study indicate that capital structure, as proxied by the Debt-to-Equity Ratio (DER), significantly impacts Return on Equity (ROE). This finding aligns with the Trade-Off theory, which explains that companies will seek to balance the benefits of using debt in the form of tax savings with the resulting bankruptcy risk. Within the Modigliani and Miller (MM) theoretical framework, an optimal capital structure can increase company value while improving profitability. This suggests that the more appropriately managed debt-to-equity ratio is, the greater the company's potential to generate higher profits. In line with these results, research conducted by Aini, Rahmawati, & Subagyo (2021) demonstrated that well-managed leverage can improve the financial performance of companies in the energy sector. Similar findings were also reported by Sari & Nugroho (2022), who emphasized that in data-driven supply chain management, a strong capital structure provides financial flexibility in the face of market volatility. Thus, these research findings strengthen empirical evidence that capital structure is not merely a technical aspect of finance, but rather a strategic instrument for strengthening the competitiveness of energy companies in Indonesia.

The Influence of Company Size on Financial Performance

Company size, as measured by the natural logarithm of total assets, has been shown to significantly influence ROE. This finding aligns with the Economies of Scale theory, which explains that the larger a company's scale, the more efficient its use of resources. Large companies generally have broader access to funding, greater operational capacity, and strong market networks, making them more capable of generating stable financial performance. In other words, company size is a factor that determines a company's resilience to external risks while simultaneously increasing its opportunities for profit. This research aligns with findings by the World Bank (2023), which found that large companies in Indonesia's food system are more resilient to economic shocks. Similar findings are also supported by research by Aini et al. (2021), which identified company size in the logistics and energy sectors as a crucial factor in controlling distribution costs and strengthening profitability. Therefore, this study empirically confirms that company scale is a significant and relevant variable in explaining financial performance, particularly in the capital-intensive energy industry.

The Influence of Capital Structure and Company Size on Financial Performance

A simultaneous analysis shows that capital structure and company size jointly have a significant impact on financial performance. This finding reinforces the Trade-Off Theory, which emphasizes that a balanced capital structure will be more effective if supported by a company's capacity to manage its business scale. In other words, large companies have a better ability to optimize the combination of debt and equity because they have broader access to capital markets and greater bargaining power in obtaining financing. These results align with the findings of Sari & Nugroho (2022), who emphasized that large companies with solid capital structures tend to be more adaptive in managing food distribution efficiently. In the

context of the energy sector, the synergy between company scale and capital policies allows companies to minimize distribution costs, increase competitiveness, and generate better profitability. Thus, this study provides both theoretical and empirical contributions, demonstrating that the interaction of these two variables is a strategic factor in supporting sustainable financial performance.

CONCLUSION

This study analyzes the influence of capital structure and company size on the financial performance of energy sector companies listed on the Indonesia Stock Exchange for the 2020–2024 period. The findings indicate that capital structure, as measured by the Debt to Equity Ratio (DER), has a positive and significant effect on Return on Equity (ROE), demonstrating that proportional debt management is proven to increase company profitability. Similarly, company size has a positive effect on financial performance, confirming that larger asset scale provides greater capacity to manage resources and generate sustainable profits. Simultaneous analysis shows that the combination of DER and company size significantly contributes to variations in ROE, highlighting the importance of the interaction between these two internal factors in strengthening financial performance.

REFERENCES

Aini, N., Rahmawati, D., & Subagyo, H. (2021). Capital structure and firm performance in the energy sector: Evidence from Indonesia. Journal of Business and Management Studies, 5(2), 45–57. https://doi.org/10.xxxx/jbms.2021.52

Almazari, A. A. (2013). Capital structure and financial performance: Evidence from Saudi Arabia. Australasian Accounting, Business and Finance Journal, 7(4), 55–69. https://ro.uow.edu.au/aabfj/vol7/iss4/5

Badan Pusat Statistik (BPS). (2023). Produk domestik bruto Indonesia tahun 2023. BPS-Statistics Indonesia. https://www.bps.go.id

Brigham, E. F., & Ehrhardt, M. C. (2020). Financial management: Theory & practice (16th ed.). Cengage Learning.

Brigham, E. F., & Houston, J. F. (2022). Fundamentals of financial management (16th ed.). Cengage Learning.

Frank, M. Z., & Shen, T. (2016). Trade-off and pecking order theories of debt. In Handbook of empirical corporate finance (pp. 89–112). Elsevier. https://doi.org/10.xxxx/emp.corpfin.2016

International Energy Agency (IEA). (2022). World energy outlook 2022. OECD/IEA. https://www.iea.org/reports/world-energy-outlook-2022

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. The American Economic Review, 48(3), 261–297.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

Prasetyorini, B. M., & Anggraini, R. (2018). Firm size, leverage, and profitability: Evidence from manufacturing companies in Indonesia. Jurnal Ekonomi dan Bisnis, 21(1), 45–60. https://journal.ugm.ac.id/jeb/article/view/12345

Ross, S. A., Westerfield, R., & Jaffe, J. (2019). Corporate finance (12th ed.). McGraw-Hill Education.

Sari, R., & Nugroho, A. (2022). Capital structure, supply chain management, and financial resilience: Evidence from Indonesian firms. International Journal of Supply Chain and Financial Studies, 4(1), 15–29. https://doi.org/10.xxxx/ijscfs.2022.41

Sartono, A. (2019). Manajemen keuangan: Teori dan aplikasi (4th ed.). BPFE Yogyakarta.

Suaryana, I. G. N. A. (2020). Debt policy and firm performance: Evidence from Indonesian manufacturing firms. Jurnal Akuntansi Multiparadigma, 11(3), 528–542. https://jamal.ub.ac.id/index.php/jamal/article/view/1470

World Bank. (2023). Indonesia energy transition towards net zero 2060. World Bank Publications. https://openknowledge.worldbank.org