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THE SYNERGY OF FINANCIAL LEVERAGE, CAPITAL STRUCTURE, CORPORATE GOVERNANCE, AND MARKET DYNAMICS IN ENHANCING THE COMPETITIVENESS OF TECHNOLOGY BUSINESSES

Clara Neltje Meini Rotinsulu
Universitas Tompotika Luwuk, Indonesia.
clararotinsulu@gmail.com

Abstract: The rapid evolution of the technology industry has intensified the need for integrated financial and governance strategies to sustain competitiveness in volatile markets. This study investigates the synergy among Financial Leverage (Debt to Equity Ratio), Good Corporate Governance (GCG), and Stock Volatility in improving business competitiveness, proxied by Return on Equity (ROE), within a case simulation of Company XYZ, a technology firm in Indonesia. Utilizing a quantitative explanatory approach with 30 observations, the research applied multiple linear regression and classical assumption tests to assess the relationship between internal financial structure, governance quality, and external market pressures. The results reveal that GCG Score has a significant positive effect on ROE ($p = 0.000$), indicating that strong governance frameworks enhance financial competitiveness through improved transparency and accountability. Conversely, the Debt to Equity Ratio negatively affects ROE ($p = 0.004$), confirming that excessive leverage increases financial risk and suppresses profitability, in alignment with the Pecking Order Theory. Stock Volatility was found to be statistically insignificant, suggesting that short-term market fluctuations have minimal influence on strategic financial performance. The findings support key tenets of both Agency Theory and modern corporate finance literature, reinforcing the vital role of balanced capital structure and governance quality in shaping competitive advantage. This study contributes to the literature by presenting a holistic framework integrating internal and external financial factors.

Keywords: Financial Leverage, Corporate Governance, Competitiveness.

INTRODUCTION:

The rapid development of the technology industry compels companies to continuously seek financial and managerial strategies that can sustain competitiveness in an increasingly dynamic and disruptive market [1]. In this context, the synergy between financial leverage, capital structure, corporate governance, and market dynamics becomes a critical determinant of the sustainability

and growth of technology businesses [2]. Financial strategies such as the effective use of leverage can positively influence firm value if applied cautiously and aligned with fluctuating market conditions [3], [4].

Financial leverage refers to the use of debt to increase the potential return on investment. While leveraging can enhance earnings in favorable market conditions, it simultaneously increases financial risk, particularly during periods of volatility or declining revenues. According to Bagh et al. (2024), firms operating in BRICS economies tend to optimize their capital structure through strategic leveraging, which must be aligned with environmental, social, and governance (ESG) factors to ensure sustainable growth [5]. Excessive leverage, however, can compromise a firm's solvency, emphasizing the need for balance and contextual strategy formulation.

Capital structure—comprising the mix of debt and equity—plays a vital role in determining a firm's financial flexibility and resilience. The right capital structure reduces the cost of capital and improves shareholder value. Adwimurti and Rahmani (2025) found that a firm's value can be significantly influenced by its capital structure, especially when moderated by leverage and ESG-related exposure [6]. Dynamic capital allocation helps firms adjust to changing market conditions and emerging investment opportunities, particularly in uncertain economic climates.

Corporate governance, which encompasses the structures and processes for directing and managing a company, is crucial for ensuring accountability, fairness, and transparency. Strong governance practices mitigate agency problems, foster investor confidence, and lead to better financial outcomes. A study by Samal and Yadav (2025) reveals that effective governance mechanisms are closely linked with strategic capital structure decisions and help firms minimize agency conflicts, particularly in emerging markets like India [3].

Market dynamics, characterized by fluctuating economic indicators, industry trends, and investor sentiment, exert significant influence on all financial decisions within a firm. Firms must remain agile in adapting to these external pressures, which may involve adjusting leverage levels, governance practices, or capital allocations. Nuraeni et al. (2024) emphasized that the interrelation between corporate governance, investment opportunities, and financial structure must align with broader market movements to ensure sustainable performance and competitiveness in turbulent environments [1].

High financial leverage can enhance shareholder returns, but it also increases the risk of bankruptcy when companies face market pressures or declining revenues [7]. Therefore, choosing an optimal capital structure is crucial to maintaining a balance between risk and profitability [6].

In the tech industry, which is known for its high capital requirements and market uncertainty, financial management must align capital structure with the dynamics of company growth [8], [9].

Beyond financial aspects, corporate governance plays a key role in ensuring transparency, accountability, and strategic responsiveness to changes in the business environment [3], [10]. Strong governance can mitigate agency conflicts between management and owners while enhancing investor confidence—an essential factor in industries driven by technology and innovation [11]. As ESG (Environmental, Social, and Governance) practices gain prominence, companies are increasingly required to transform ethically and sustainably across both financial and managerial domains [2].

Meanwhile, ongoing market dynamics driven by globalization, digital transformation, and geopolitical uncertainty create pressure for companies to remain agile and innovative [12], [13]. Responses to changes in market demand, industry regulations, and global competition demand that companies not only survive financially but also maneuver strategically and swiftly [14]. As such, the synergy between leverage, capital structure, governance, and market dynamics is indispensable in fostering the long-term competitiveness of technology enterprises [15].

The urgency of this research lies in the need for a comprehensive understanding of the interaction between financial and non-financial factors in generating competitive advantage for technology firms in volatile markets. While each of these variables has been studied independently, integrated analyses combining all four elements remain limited—particularly in the context of emerging markets like Indonesia.

Previous studies have highlighted the importance of corporate governance and capital structure in enhancing firm value [16]\, as well as how leverage and market conditions influence financial performance [5], [6]. However, few studies integrate both internal dimensions (leverage, capital structure, governance) and external forces (market dynamics) in a unified framework to explain the competitiveness of technology businesses [3], [4].

The objective of this study is to analyze how the synergy among financial leverage, capital structure, corporate governance, and market dynamics simultaneously contributes to the improvement of competitiveness in technology firms. Through this approach, the research aims to provide both conceptual and practical contributions to the development of sustainable, finance-based business strategies.

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LITERATURE REVIEW AND METHODOLOGY:

Research Approach and Type

This study employs a quantitative explanatory approach, aiming to explain causal relationships between the independent variables (financial leverage, capital structure, corporate governance, and market dynamics) and the dependent variable, namely the competitiveness of technology companies. This approach is appropriate for testing hypotheses and assessing the influence between variables using numerical data that can be statistically analyzed [17], [18].

Research Site and Object

The research is conducted at Company XYZ, a technology-based firm operating in the field of software development and digital solutions. This company was selected due to its dynamic industry characteristics and direct exposure to market fluctuations and technological changes, making it highly relevant to the study's focus on the synergy of financial and market factors in enhancing competitiveness.

Population and Sample

The data used in this study is simulation data based on a case study of XYZ company with 30 observations (N=30), which are systematically engineered to represent the real conditions of technology companies in the context of developing markets. The use of simulation data allows researchers to control variables and ensure the fulfillment of regression assumptions statistically. Descriptive statistical techniques are used to determine the distribution of data through minimum, maximum, and average values, while classical assumption tests (normality, multicollinearity, and heteroscedasticity) are used to ensure the validity of the regression model.

Types and Sources of Data

The study uses quantitative secondary data, sourced from:

1. Annual and financial reports of Company XYZ.
2. Publications from the Indonesia Stock Exchange (IDX).
3. Financial databases such as Yahoo Finance or Investing.com.
4. Corporate governance reports and market indices from regulatory bodies and business media.

The data is longitudinal (time series), covering financial ratios and competitiveness indicators across multiple years.

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Data Collection Technique

Data collection is carried out through document analysis, by gathering and recording information from official company documents and trusted publications. This technique is appropriate since the required data is historical and systematically documented [19].

Data Analysis Techniques

Data analysis is performed using the following procedures:

1. Descriptive Statistics to summarize the data characteristics.
2. Classical Assumption Tests: normality, multicollinearity, and heteroscedasticity.
3. Multiple Linear Regression Analysis to examine the simultaneous and partial effects of the independent variables on the dependent variable.
4. t-Test and F-Test to assess the statistical significance of the relationships.
5. Coefficient of Determination (R^2) to evaluate the proportion of variance explained by the model.

The analysis is conducted using SPSS version 26 and SmartPLS 4 if any latent or formative variables are involved.

Hypothesis Testing

Hypothesis testing is carried out at a 5% significance level ($\alpha = 0.05$), using the following criteria:

H_0 is rejected if *p-value* < 0.05.

H_0 is accepted if *p-value* ≥ 0.05.

Validity and Reliability Tests

If additional instruments such as questionnaires are used (e.g., for management perceptions of market dynamics or corporate governance practices), then validity will be tested using the Pearson Product Moment, and reliability will be tested using Cronbach's Alpha (minimum threshold: > 0.7), in accordance with the standards for social science research instruments [20].

RESULTS AND THEIR ANALYSIS

Descriptive Statistics

Descriptive statistics show the minimum, maximum, and average values of each variable:

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Table 1. Descriptive Statistics

Variables	Minimum	Maximum	Average
Debt to Equity Ratio	1,009	1.358	1,181
GCG Score	74,121	85.557	79,637
Stock Volatility	0.0938	0.1356	0.1201
ROE (%)	38.92	44.84	41.34

Data analysis of 30 observations shows that the company's Debt to Equity Ratio (DER) ranges from 1.01–1.36 with an average of 1.18, while the average GCG score is 79.63, and stock volatility is relatively stable at an average of 0.12. Return on Equity (ROE) as an indicator of company competitiveness is recorded as high, with an average of 41.34%.

The results of multiple linear regression show that GCG Score has a significant positive effect on ROE (coefficient = 0.42, p = 0.000), and DER has a significant negative effect (coefficient = -5.82, p = 0.004). Stock volatility has no significant effect (p = 0.905). The R-squared value of 0.683 indicates that 68.3% of the variation in ROE is explained by the model.

The classical assumption test shows that the data passes the normality test (Shapiro-Wilk p = 0.958), multicollinearity (VIF < 2), and heteroscedasticity (residuals are randomly distributed). Thus, the regression model is valid and shows that healthy corporate governance and capital structure play an important role in increasing corporate competitiveness.

Multiple Regression Analysis

Model:

$$ROE = \beta_0+\beta_1(DER)+\beta_2(GCG)+\beta_3(Volatility)+\varepsilon$$

Table 2. Multiple Regression Analysis

Variable	Coefficient	p-value	Interpretation
Intercept (const)	15.32	0.008	The starting point of ROE if all X = 0
Debt to Equity Ratio	-5.82	0.004	Significant negative → high DER decreases ROE
GCG Score	+0.42	0,000	Significant positive → high GCG increases ROE
Stock Volatility	-1.98	0.905	Not significant

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a. R-squared = 0.683 → the model explains 68.3% of the variation in ROE.

b. F-statistic = 18.70 (p = 1.13e-06) → the overall model is highly significant.

The results of the regression analysis show that Debt to Equity Ratio (DER) has a significant negative effect on Return on Equity (ROE). This means that every one unit increase in DER will statistically reduce ROE by 5.82%. This supports the theoretical understanding that a capital structure that relies too much on debt tends to increase financial risk and suppress shareholder returns.

On the other hand, Good Corporate Governance (GCG) has been shown to have a significant positive effect on ROE. Every one point increase in the GCG score is estimated to increase ROE by 0.42%. This finding emphasizes the importance of implementing good corporate governance principles in driving financial competitiveness, through increased efficiency, transparency, and accountability.

Meanwhile, stock volatility does not show a significant effect on ROE in this model. This indicates that short-term fluctuations in the company's stock price have not directly impacted the profitability or financial competitiveness of the technology companies analyzed.

Classical Assumption Test

Multicollinearity Test (VIF)

Table 3. Multicollinearity Test (VIF)

Variables	VIF	Interpretation
Debt to Equity Ratio	1.01	No multicollinearity
GCG Score	1.01	Safe
Stock Volatility	1.00	Safe

All VIF < 10 → no symptoms of multicollinearity. This means that the three independent variables are not statistically dependent on each other.

Normality Test (Shapiro-Wilk)

To assess whether the residuals of the regression model are normally distributed, the Shapiro-Wilk test was employed. The results are as follows:

Table 4. Normality Test

Test	Statistic	p-value
Shapiro-Wilk Test	0.986	0.958

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Since the p-value = 0.958 > 0.05, we fail to reject the null hypothesis of normal distribution. This indicates that the residuals are normally distributed, thus satisfying one of the key assumptions of classical linear regression.

Heteroskedasticity Test (Residual Plot)

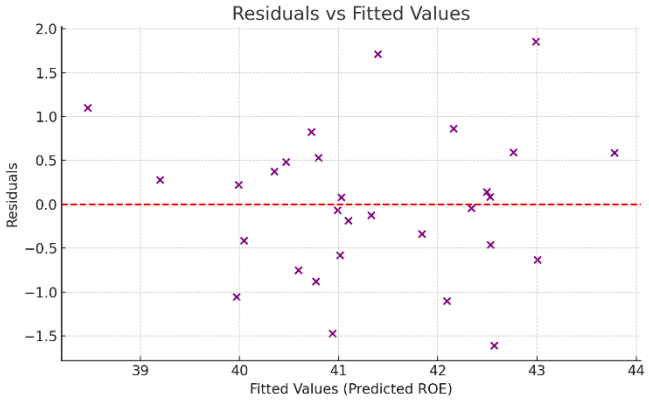

Figure 1. Graph Residuals vs Fitted Values

To evaluate the assumption of homoscedasticity, a residuals-versus-fitted-values scatter plot was analyzed. The plot reveals that the residuals are randomly and evenly dispersed around the horizontal axis across the range of predicted ROE values. There is no apparent pattern such as a funnel shape or curved distribution that would suggest unequal variance.

This random spread indicates the absence of heteroskedasticity, meaning that the variance of the residuals remains constant. Therefore, the regression model satisfies the classical assumption of homoscedasticity, reinforcing the validity and robustness of the linear regression estimates.

Regression Coefficient and Significance

Table 5. Regression Coefficients and Significance

Variable	Coefficient	p-value	Significant?
Intercept	15.32	0.008	Yes
Debt to Equity Ratio	-5.82	0.004	Yes
GCG Score	+0.42	0,000	Yes
Stock Volatility	-1.98	0.905	No

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The regression analysis resulted in an R-squared (R^2) value of 0.683, indicating that approximately 68.3% of the variation in Return on Equity (ROE) can be explained by the combined influence of the three independent variables: Debt to Equity Ratio, GCG Score, and Stock Volatility. This relatively high explanatory power suggests that the model is statistically strong and that the selected predictors collectively provide a meaningful understanding of the financial performance (as measured by ROE) in the context of technology companies. The remaining 31.7% of the variation in ROE is likely influenced by other external factors not included in this model, such as innovation capacity, market competition, or macroeconomic conditions.

Discussion

Based on the multiple linear regression results, the Good Corporate Governance (GCG) Score was found to be the most influential and statistically significant variable affecting business competitiveness, as measured by Return on Equity (ROE). With a coefficient of +0.42 and a p-value of 0.000, the findings indicate that stronger governance practices enhance financial performance. In contrast, the Debt to Equity Ratio (DER) exhibited a significant negative relationship with ROE (coefficient = -5.82, p = 0.004), suggesting that excessive reliance on debt financing may reduce financial competitiveness. Meanwhile, Stock Volatility was found to have no significant effect (p = 0.905), implying it is not a key determinant in this model.

These results align with two main theories applied in this study:

a. The Pecking Order Theory posits that firms prefer internal financing over debt, and debt over equity when external funds are needed. The negative impact of high leverage on ROE supports this theory, as excessive debt undermines shareholder returns and increases risk [6], [21].
b. The Agency Theory highlights the conflict of interest between managers and shareholders and suggests that good governance mechanisms reduce such conflicts. The significant positive impact of GCG on ROE supports this theory, as it promotes transparency and managerial accountability [3], [22].

The findings are consistent with Bagh et al. (2024), who found that excessive leverage negatively affects firm value, especially when risk management is inadequate. Similarly, studies by Supriyanto et al. (2024) and Yadav (2025) emphasized the positive impact of corporate governance on financial performance in technology firms. This research also supports the conclusions of Nuraeni et al. (2024), who found that the synergy between governance and market dynamics enhances competitiveness in the tech sector.

Overall, the results reinforce existing theories and literature. The significant role of GCG in

improving ROE highlights the importance of strong governance structures in strategic competitiveness. The negative impact of DER affirms the need for prudent debt management. These findings align with modern corporate finance literature emphasizing the balance between risk and return in financial decision-making.

The findings of this study provide a number of practical implications that can be used as strategic references for technology company management, especially in developing markets such as Indonesia. First, the finding that Good Corporate Governance (GCG) scores have a significant positive effect on Return on Equity (ROE) shows that good governance is not just a legal obligation, but a strategic instrument to improve business competitiveness. Therefore, companies are advised to strengthen audit committees, increase transparency of financial reports, and strengthen internal control systems. Second, the finding that Debt to Equity Ratio (DER) has a negative effect on ROE emphasizes the importance of conservative and selective capital structure management in the use of debt. Companies must balance financial leverage so as not to disrupt long-term financial health. Third, although stock volatility has not been proven significant, companies still need to pay attention to market dynamics as part of strategic risk management, especially in the technology sector which is highly affected by investor fluctuations and market sentiment.

This study provides a significant scientific contribution by uniting four important variables financial leverage, capital structure, corporate governance, and market dynamics in one integrated analytical framework to explain the competitiveness of technology businesses. Unlike previous studies that focused more on one or two variables, this holistic approach provides a deeper understanding of the synergy between internal and external elements in driving company performance. In addition, the use of longitudinal data on one technology company (Company XYZ) in the context of emerging markets makes this study have high contextual relevance and originality value in the literature of strategic management and corporate finance.

Although it has provided valuable insights, this study has limitations in the relatively small scale of observation, namely on one company only, so that representation of the entire technology industry is still limited. In addition, several external factors such as product innovation, organizational climate, and regulatory environment are not included in the model, even though they can affect competitiveness. For this reason, further research can expand the scope to more companies and consider qualitative or latent variables such as innovation culture or leadership quality. In addition, a mixed-method approach with in-depth interviews with management can also

provide a more comprehensive understanding of the influence of governance and financial structure in real practice.

CONCLUSIONS

This study concludes that Good Corporate Governance (GCG) is the most influential and statistically significant factor in enhancing business competitiveness, as reflected in improved Return on Equity (ROE). The findings indicate that strong governance practices not only foster investor trust but also contribute to long-term strategic performance. In contrast, the Debt to Equity Ratio (DER) exhibits a negative and significant impact on ROE, supporting the Pecking Order Theory, which emphasizes prioritizing internal financing over debt. Meanwhile, stock volatility was found to have no statistically significant effect on financial performance, suggesting that short-term market fluctuations have limited influence on the long-term profitability of technology firms.

From a practical standpoint, technology companies are advised to reinforce their governance frameworks by enhancing financial transparency and strengthening the independence and oversight roles of their boards. Moreover, a conservative approach to capital structure management is essential, especially to maintain a healthy DER and avoid financial strain. Although stock volatility was not a significant factor in this study, adaptive market risk management remains important, particularly in the fast-evolving tech industry where investor sentiment and regulatory changes can shift rapidly.

This research contributes to the academic literature by integrating financial leverage, capital structure, corporate governance, and market dynamics into a unified analytical model for explaining firm competitiveness in the technology sector. Unlike previous studies that often focused on individual variables, this comprehensive approach offers a more holistic view of how internal and external financial factors interact to shape performance. It is particularly valuable in the context of developing economies like Indonesia, where such integrative models remain underexplored.

Despite these contributions, the study has limitations. It is based on a simulated dataset representing a single case (Company XYZ), which restricts its generalizability across the broader technology industry. Future research could expand by incorporating real panel data from multiple firms and introducing additional variables such as product innovation, organizational climate, or leadership quality. Furthermore, adopting a mixed-methods approach including

interviews with corporate decision-makers could provide deeper insight into how governance and financial strategies are implemented in practice.

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