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Impact of Capital Structure, Firm Size, and Inflation on Profitability: The Moderating Role of Good Corporate Governance in Energy Firms

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ABSTRACT

Profitability in energy sector companies is influenced by financing decisions, firm scale, macroeconomic conditions, and governance quality. This study examines the effects of capital structure, firm size, and inflation on profitability, with good corporate governance (GCG) as a moderating variable, in energy sector companies listed on the Indonesia Stock Exchange during 2020–2024. Using a quantitative approach, this study analyzes 47 companies selected through purposive sampling, resulting in 235 firm-year observations. Data were analyzed using panel data regression and Moderated Regression Analysis with EViews 13. The Random Effect Model was selected based on the Hausman test ($p = 0.4497$) and Breusch-Pagan LM test ($p = 0.0000$). The results show that capital structure negatively affects profitability ($\beta = -0.011929$; $p = 0.0174$), while firm size ($\beta = 0.019412$; $p = 0.0133$) and inflation ($\beta = 0.023036$; $p = 0.0001$) have positive effects. GCG does not directly affect profitability ($p = 0.8948$). However, GCG significantly moderates the firm size–profitability relationship ($\beta = -0.057456$; $p = 0.0323$), weakly moderates capital structure–profitability ($p = 0.0515$), and does not moderate inflation–profitability ($p = 0.6020$). These findings suggest that energy firms should optimize debt management, scale efficiency, and governance implementation beyond compliance.

Keywords: Capital Structure; Firm Size; Good Corporate Governance; Inflation; Profitability

JEL Classification: E31; G32; G34; L25; Q43

INTRODUCTION

The capital market contributes significantly to economic growth by allowing the flow of funds from investors to productive sectors. The Indonesia Stock Exchange (IDX) is the major entity responsible for organizing and providing infrastructure for the trading of financial products such as bonds, stocks, and mutual funds. Additionally, IDX publishes the Composite Stock Price Index (CSPI), which serves as an important benchmark for overall market performance. As a central platform for financial reporting, IDX ensures transparency and accessibility of corporate data, making it a reliable source for empirical financial research (Rengganis et al., 2023).

Among the sectors listed on IDX, the energy sector holds a strategic position as a key driver of national economic development. This sector includes companies engaged in the exploration, extraction, processing, and distribution of energy resources, particularly coal, oil, and gas. However, the performance of energy companies is highly dependent on global commodity price fluctuations, making the sector inherently volatile. At the same time, the ongoing global transition toward renewable energy has encouraged companies to diversify their business portfolios to remain competitive and sustainable in the long term (Simbolon & Simbolon, 2024).

In addition to its economic importance, the energy sector is also closely associated with environmental challenges due to its reliance on natural resource extraction (Simbolon & Simbolon, 2024). As a result, business success is no longer evaluated merely on financial metrics, but also on environmental and social metrics (Rengganis et al., 2023). This shift has increased pressure on companies to maintain profitability while simultaneously investing in sustainable practices and cleaner energy technologies.

Profitability represents a crucial measure of corporate financial health as it demonstrates managerial capability to efficiently use assets and capital to create revenue (Irawati & Fadhila, 2024). Maintaining profitability is especially critical in capital-intensive businesses like energy, which demand a high level of capital expenditure (CAPEX) for operations and long-term investments. Profitability also serves as an essential source of internal financing, enabling companies to fund expansion and sustainability initiatives without excessive reliance on external debt (Majidah et al., 2022).

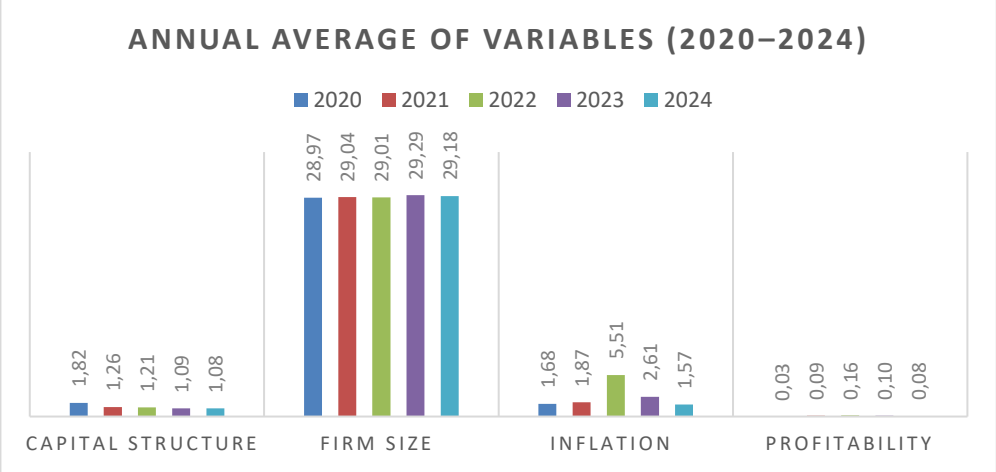
Several factors influence corporate profitability, originating from inside and outside the firm (Wati et al., 2021). A critical internal factor is the financing arrangement, which indicates the percentage of the use of liabilities and shareholders' funds to support corporate operations (Rengganis et al., 2023). Although an excessive reliance on debt raises financial risk and may reduce profitability, an appropriate capital structure can improve corporate performance (Kabichi & Bwana, 2024). There are conflicting empirical results about the connection between capital structure and profitability. Some studies report a significant effect, indicating that capital structure can improve firm performance when managed efficiently, while others find no significant relationship, suggesting that its impact depends on industry characteristics and managerial effectiveness (Agmas, 2020).

Another important factor is firm size, which reflects the scale of a company's operations and its access to financial resources (Mardhiah & Risman, 2026; Prasetyo & Prasetio, 2025). Larger enterprises often gain advantages from production efficiency, enhanced competitive dominance, and improved access to capital, which can increase profitability (Yadav et al., 2022). Nevertheless, previous studies have shown inconsistent results. While some research finds a positive relationship between firm size and profitability,

others indicate no significant effect, implying that operational efficiency may be more important than size alone (Yadav et al., 2022).

From an external perspective, inflation is a macroeconomic factor that can influence corporate profitability. Rising inflation tends to increase production and operational costs, thereby reducing profit margins. However, in the energy sector, corporations may be able to transfer increased expenses to buyers via elevated selling prices, especially during periods when global commodity prices rise (Tërstena et al., 2023). As a result, the link between inflation and profitability remains unclear. Some research discovers a beneficial influence, but others indicate negative or inconsequential connections (Nugraha et al., 2021).

Figure 1. Average Values of Research Variables (2020–2024)



A notable phenomenon occurred during the 2020–2024 period, particularly in 2022, when Indonesia experienced a significant increase in inflation, reaching 5.51%. This increase was driven by rising global energy prices and government policies, including fuel price adjustments (Bank Indonesia, 2022; Central Agency of Statistics [Badan Pusat Statistik/BPS], 2023). To further illustrate this phenomenon, Figure 1 presents the average values of the research variables during the 2020–2024 period. The figure shows that both inflation and profitability increased in 2022, where inflation rose sharply to 5.51%, and profitability increased to 0.16 (16%). This pattern differs from conventional theory, suggesting that rising inflation generally reduces profit margins due to higher operational costs. Rather, higher commodity prices seem to help energy corporations, suggesting that a complicated interplay between internal financial choices and external macroeconomic factors affects energy sector profitability.

In addition, capital structure shows a declining trend over the period, indicating a gradual decrease in the proportion of debt relative to equity among energy firms, while firm size remains relatively stable. Despite these relatively stable internal conditions, profitability exhibits a sharp increase in 2022 followed by a gradual decline, suggesting that firm performance is not solely driven by internal factors. Instead, energy companies appear to benefit from rising commodity prices, indicating that profitability in the energy sector is influenced by a complex interaction between internal financial decisions and external macroeconomic conditions.

Furthermore, profitability in the energy sector is also exposed to operational risks and uncertainties. Events such as force majeure can significantly disrupt company operations and financial performance. For instance, PT Perusahaan Gas Negara Tbk (PGAS)

experienced a force majeure event during the research period, illustrating that even large firms are vulnerable to unforeseen shocks that may affect profitability (Rahman & Yilun, 2021). This condition underscores the importance of effective financial management in maintaining corporate performance under uncertain conditions.

In this setting, good corporate governance (GCG) is crucial in ensuring that executive actions align with shareholder interests through effective monitoring and control procedures (Waruwu et al., 2025). Indicators of GCG include audit committees, independent commissioners, managerial ownership, and institutional ownership (Lestari et al., 2025). Prior research suggests that GCG may improve or reduce the link between financial factors and profitability, but actual data are conflicting (Mardhiah & Risman, 2026).

According to the preceding discussion, the profitability of energy sector enterprises is determined by internal elements like financing composition and organizational scale, along with external elements such as price growth. However, past empirical findings are inconsistent, indicating the presence of potential moderators such as corporate governance. As a result, the purpose of this research is to look into the impact of capital structure, firm size, and inflation on profitability among energy industry firms listed on the IDX over the period of 2020—2024, with GCG functions as a moderating variable in the model; however, its moderating effect is limited and only significant in specific relationships.

LITERATURE REVIEW

Signaling Theory

Signaling theory describes the way informed actors convey information advantages, such as management, strategically convey credible signals to less-informed parties, such as investors, to reduce information asymmetry. This theory also refers to actions taken by management to provide guidance regarding the company's prospects (Komara et al., 2020). Signals are effective only when the cost of obtaining them is negatively correlated with underlying quality, meaning high-quality parties bear relatively lower signaling costs. This ensures that only genuinely high-quality entities invest in signaling, making it a credible indicator of future prospects and leading to a signaling equilibrium (Connelly et al., 2025).

In the context of capital markets, signaling theory explains how management's expectations of future performance influence investor decisions. Financial statements serve as a medium for these signals, acting as coded information delivered to investors. For example, high earnings per share (EPS) signal strong value creation for shareholders, while an increase in return on assets (ROA) reduces information asymmetry and strengthens positive market perceptions.

Hypotheses Development

Capital Structure and Profitability

The percentage of debt and equity that a business uses to fund its operations and investments is reflected in its capital structure (Kabichi & Bwana, 2024). Because interest costs can lower taxable income, using debt may offer advantages through tax shielding. An optimal capital structure can improve company performance by increasing operational capacity and investment opportunities (Simon et al., 2025). However, excessive debt may increase financial risk and interest burdens, which can negatively affect profitability (Rengganis et al., 2023).

In energy sector companies, which are generally capital-intensive, financing decisions play a crucial role in supporting operational sustainability and expansion. Previous studies have shown inconsistent findings regarding the relationship between capital structure and profitability. Some studies found a positive relationship, while others found negative or insignificant effects depending on industry conditions and managerial efficiency (Agmas, 2020). Based on signaling theory, an effective capital structure may signal strong financial management and positively influence profitability. Therefore, the following hypothesis is proposed:

H1: Capital structure has a significant effect on profitability in energy sector companies.

Firm Size and Profitability

Firm size reflects the scale of a company's operations and is commonly measured using total assets (Rahman & Yilun, 2021). Bigger firms typically have better access to outside funding, stronger market positions, and more resources. Additionally, they might attain economies of scale, which could boost profitability by lowering average operating costs through increased production (Yadav et al., 2022). Large companies are often perceived as more stable and credible by investors and creditors, which may support operational efficiency and financial performance.

Nevertheless, previous studies have reported inconsistent findings regarding the effect of firm size on profitability, indicating that operational efficiency may be more important than company size alone (Al Yami et al., 2022). Based on signaling theory, larger firms may send positive signals regarding operational capability and long-term sustainability, thereby enhancing profitability. Therefore, the following hypothesis is proposed:

H2: Firm size has a significant effect on profitability in energy sector companies.

Inflation and Profitability

Inflation refers to a continuous increase in the general price level over a certain period (Muthalib et al., 2019). Rising inflation can increase operational and production costs, reduce purchasing power, and negatively affect corporate profitability. However, in the energy sector, companies may benefit from rising commodity prices during inflationary periods, particularly when global energy demand increases (Tërstena et al., 2023).

The phenomenon observed during 2022 showed that despite rising inflation, many energy companies experienced increased profitability due to higher commodity prices and post-pandemic economic recovery. This indicates that the impact of inflation on profitability may vary depending on industry characteristics and a company's ability to adjust prices and maintain efficiency. Based on signaling theory, the ability of firms to maintain profitability during inflationary conditions may provide positive signals regarding managerial effectiveness and operational resilience. Therefore, the following hypothesis is proposed:

H3: Inflation has a significant effect on profitability in energy sector companies.

Capital Structure and Profitability with GCG Moderating

GCG represents a system of governance that ensures transparency, accountability, fairness, and responsibility within a company (Perdana et al., 2024). Strong governance mechanisms may improve managerial oversight and reduce conflicts of interest between management and shareholders (Rengganis et al., 2023). In the relationship between capital structure and profitability, GCG may strengthen the effectiveness of financing decisions by ensuring that debt is managed efficiently and used for productive activities

(Rengganis et al., 2023). Effective governance can reduce agency problems and improve investor confidence, thereby enhancing the positive impact of optimal leverage on profitability. Therefore, the following hypothesis is proposed:

H4: Capital structure has a significant effect on profitability with GCG as a moderating variable in energy sector companies.

Firm Size and Profitability with GCG Moderating

Larger firms generally require more complex governance systems due to broader operational activities and greater stakeholder involvement (Mardhiah & Risman, 2026). Effective GCG implementation may strengthen the relationship between firm size and profitability by improving transparency, monitoring managerial performance, and supporting efficient resource allocation (Arifin, 2023). Strong governance mechanisms can help large companies maintain operational efficiency and reduce managerial inefficiencies, thereby maximizing the benefits associated with larger operational scale. Therefore, the following hypothesis is proposed:

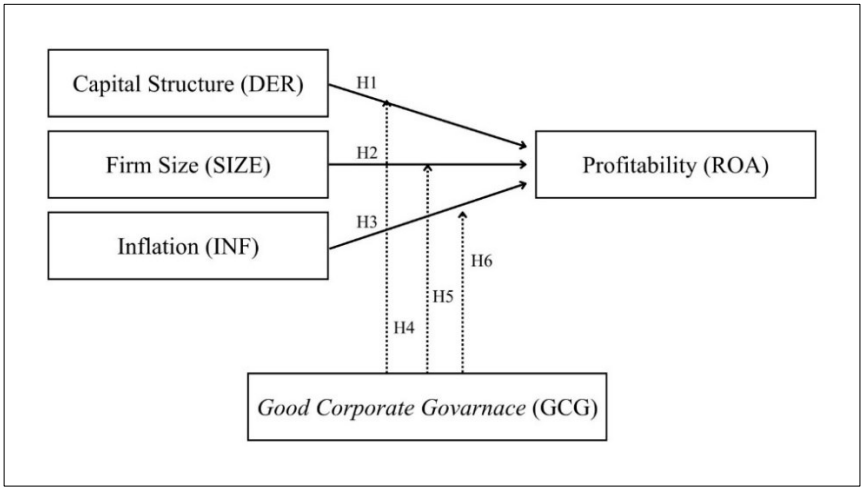
H5: Firm size has a significant effect on profitability with GCG as a moderating variable in energy sector companies.

Inflation and Profitability with GCG Moderating

Inflation may create uncertainty and increase operational costs for companies. In such conditions, effective GCG plays an important role in ensuring appropriate managerial decisions and maintaining financial stability (Tërstena et al., 2023). Companies with strong governance mechanisms are generally better able to respond to inflationary pressures through efficient cost management, strategic planning, and transparent decision-making (Muthalib et al., 2019). As a moderating variable, GCG may strengthen the relationship between inflation and profitability by improving corporate adaptability and reducing risks arising from macroeconomic instability. Therefore, the following hypothesis is proposed:

H6: Inflation has a significant effect on profitability with GCG as a moderating variable in energy sector companies.

Figure 2. Research Framework



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RESEARCH METHOD

Research Design

This study employs a quantitative research approach based on positivist philosophy, where data analysis is conducted using statistical methods to test predetermined hypotheses (Sugiyono, 2021). Using GCG as a moderating variable, the study examines the relationship between capital structure, firm size, inflation, and profitability in energy sector companies listed on the IDX between 2020 and 2024. Since the dataset combines cross-sectional and time-series data, this study applies panel data analysis using the Random Effect Model (REM) with Generalized Least Squares (EGLS) estimation. In addition, Moderated Regression Analysis (MRA) is employed to examine the moderating role of GCG in the relationship between the independent variables and profitability. All statistical analyses and data processing are conducted using EViews 13 software.

Sampling and Data Collection

83 energy-related businesses that were listed on the IDX between 2020 and 2024 make up the study's population. Purposive sampling is the method used, and it is based on certain criteria, such as companies that were regularly listed on the IDX during the observation period and companies that have the full financial data needed for this study. 47 businesses were chosen as the final sample after these criteria were applied, yielding 235 firm-year data across a five-year period (see Table 1). Secondary data from previously available sources, such as annual financial reports and sustainability-related statistics from the official IDX website, are used in this analysis. Meanwhile, inflation data were collected from publications issued by the Indonesian Central Agency of Statistics (BPS Indonesia).

Table 1. Sample Selection Criteria

No	Criteria	Total Companies
1	Energy sector companies listed on the IDX during 2020–2024	83
2	Energy sector companies not consistently listed on the IDX during 2020–2024	(24)
3	Energy sector companies without complete data required for this study	(12)
4	Final sample of companies	47
Observation period		5 years
Total firm-year observations (47 × 5)		235

Measurement

The variables used in this study consist of one dependent variable, three independent variables, and one moderating variable. Profitability is measured using ROA as the dependent variable. The independent variables include “capital structure” measured by debt-to-equity ratio (DER), “firm size” measured using the natural logarithm of total assets, and “inflation” measured using annual inflation rates based on the Consumer Price Index (CPI). GCG acts as the moderating variable in this study. The operational definitions and measurements of all variables are presented in Table 2.

Table 2. Operational Variables

Variables	Explanation	Calculation
Dependent Variable		
Profitability (ROA)	Profitability reflects the company’s ability to generate earnings from its total assets and	$ROA = \frac{Net\ Income\ After\ Tax}{Total\ Asset} \times 100\%$

	indicates managerial efficiency in utilizing company resources to produce profits (Bortoluzzo et al., 2024).	
Independent Variables		
Capital Structure (DER)	Capital structure describes the proportion of debt and equity used by a company to finance its operations and investments, reflecting the company's financing decisions and financial risk (Kabichi & Bwana, 2024).	$DER = \frac{Total\ Liabilities}{Total\ Equity}$
Firm Size (SIZE)	Firm size represents the scale of a company's operations and resources, commonly measured through total assets owned by the company (Rahman & Yilun, 2021).	$SIZE = Ln\ (Total\ Assets)$
Inflation (INF)	Inflation refers to a continuous increase in the general price level over time, which may affect purchasing power, operational costs, and corporate profitability (Muthalib et al., 2019).	$INF = \frac{CPIt - CPIt - 1}{CPIt - 1} \times 100\%$
Moderating Variable		
Good Corporate Governance (GCG)	GCG represents governance mechanisms that ensure transparency, accountability, responsibility, fairness, and independence in corporate management. In this study, GCG functions as a moderating variable that may strengthen or weaken the relationship between independent variables and profitability (Perdana et al., 2024).	GCG is measured using governance indicators consisting of audit committee, institutional ownership, managerial ownership, and independent commissioners.

Data Analysis

This study applies descriptive statistical analysis and panel data regression analysis to examine the influence of capital structure, firm size, and inflation on profitability, as well as the moderating role of GCG. Descriptive statistics are used to describe the characteristics of the variables, including mean, maximum value, minimum value, and standard deviation (Sugiyono, 2021). The panel data regression is estimated using the REM with the GLS/EGLS approach, while MRA is employed to analyze the interaction effects between GCG and each independent variable. The analytical models used in this study are formulated as follows:

Main model:

$$ROA_{it} = \alpha + \beta_1 DER_{it} + \beta_2 SIZE_{it} + \beta_3 INF_t + \beta_4 GCG_{it} + \varepsilon_{it}$$

Moderation model:

$$ROA_{it} = \alpha + \beta_1 DER_{it} + \beta_2 SIZE_{it} + \beta_3 INF_t + \beta_4 GCG_{it} + \beta_5 (DER \times GCG)_{it} + \beta_6 (SIZE \times GCG)_{it} + \beta_7 (INF \times GCG)_{it} + \varepsilon_{it}$$

Where ROA represents profitability, DER represents capital structure, SIZE represents firm size, INF represents inflation, and GCG represents good corporate governance. The symbol α denotes the constant, while β represents the regression coefficients of each independent variable. Furthermore, i refers to the cross-sectional unit, namely the company, while t refers to the time series unit, namely the year. Meanwhile, ε represents the error term in the regression model.

To determine the most appropriate panel data regression model, this study conducts the Chow test, Hausman test, and Lagrange Multiplier (LM) test. The Chow test is used to compare the Common Effect Model (CEM) and Fixed Effect Model (FEM), the Hausman test compares FEM and REM, while the LM test compares CEM and REM. In addition, classical assumption tests, consisting of multicollinearity and heteroscedasticity tests, are conducted to ensure the reliability and validity of the regression model. The correlation matrix is used for the multicollinearity test, and the residual variances' consistency is examined using the heteroscedasticity test (Ghozali, 2021). All statistical analyses are performed using EViews 13 software.

RESULTS

Descriptive Statistical Analysis

Table 3. Statistics Descriptive

Variables	M	Max.	Min.	SD
DER	1.291906	24.84900	0.002000	2.113118
SIZE	29.09675	32.70700	20.33900	1.982113
INF	2.648000	5.510000	1.570000	1.479422
GCG	1.385451	3.015000	1.019000	0.291871
ROA	0.093166	1.000000	-0.411000	0.174175

Note: M = Mean, SD = Standard Deviation, DER (Capital Structure), SIZE (Firm Size), INF (Inflation), GCG (Good Corporate Governance), ROA (Profitability)

Based on Table 3, profitability has an average value of 0.093166, with a minimum value of -0.411000 and a maximum value of 1.000000, indicating variations in the profitability performance of energy sector companies during the observation period. Capital structure shows an average value of 1.291906, suggesting that companies generally utilize both debt and equity financing in their operations. Firm size has a mean value of 29.09675, reflecting differences in the operational scale of the sampled companies. Furthermore, inflation records an average value of 2.648000, indicating relatively fluctuating macroeconomic conditions during 2020–2024. Meanwhile, GCG has an average value of 1.385451 with a relatively low standard deviation, indicating that governance practices among firms tend to be relatively consistent. Overall, the descriptive statistics demonstrate variations in company characteristics and financial conditions among energy sector firms listed on the IDX.

Panel Data Regression Model Selection

Chow Test

Table 4. Chow Test (Redundant Fixed Effects Test)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.453948	(46,184)	0.0000

Cross-section Chi-square	175.859702	46	0.0000

Based on Table 4, the Chow test was conducted to determine the appropriate panel data regression model between the CEM and FEM. According to the test results, the Cross-section F statistic's probability value is 0.0000, which is less than the significance level of 0.05. The FEM is therefore better suited for this investigation than the CEM, as the null hypothesis is rejected.

Hausman Test

Table 5. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.689477	4	0.4497

Based on Table 5, the Hausman test was conducted to determine the appropriate model between the FEM and REM. According to the test result, the Cross-section Random statistic's probability value is 0.4497, which is higher than the significance level of 0.05. The REM is therefore more suitable for this investigation than the FEM since the null hypothesis cannot be rejected.

LM Test

Table 6. LM Test Results

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	72.30620 (0.0000)	0.991075 (0.3195)	73.29728 (0.0000)

Based on Table 6, the LM test was conducted to determine the appropriate model between the CEM and REM. According to the test results, the Breusch-Pagan Cross-section statistic's probability value is 0.0000, which is less than the significance level of 0.05. The REM is therefore more suitable for this investigation than the CEM, as the null hypothesis is rejected.

Classical Assumption Tests

This study conducts classical assumption tests to ensure that the regression model satisfies the required statistical assumptions for producing unbiased, efficient, and consistent estimators. Since the study employs panel data regression, the classical assumption tests are used to evaluate the reliability of the estimated model before hypothesis testing is performed. The tests include multicollinearity and heteroscedasticity tests (Ghozali, 2021).

Multicollinearity Test

Table 7. Multicollinearity Test Using Correlation Matrix

Variables	DER	SIZE	INF	GCG
DER	1.000000	0.160885	-0.031119	0.062401
SIZE	0.160885	1.000000	-0.012314	0.480995
INF	-0.031119	-0.012314	1.000000	0.031668
GCG	0.062401	0.480995	0.031668	1.000000

Note: DER (Capital Structure), SIZE (Firm Size), INF (Inflation), GCG (Good Corporate Governance), ROA (Profitability)

The correlation matrix between the independent variables was used to perform the multicollinearity test based on Table 7. The results show that all correlation coefficients are below 0.90, indicating that there is no strong correlation among the independent variables. The highest correlation value is found between firm size and GCG, amounting

to 0.480995, which is still below the threshold value of 0.90. Therefore, it can be concluded that the regression model does not exhibit multicollinearity problems.

Heteroscedasticity Test

Table 8. Heteroscedasticity Test (Glejser Test Results)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.064497	0.073091	-0.882421	0.3785
DER	0.003333	0.001985	1.679094	0.0945
SIZE	0.003558	0.002732	1.302423	0.1941
INF	0.003791	0.002433	1.558236	0.1206
GCG	-0.013710	0.018364	-0.746584	0.4561

Note: DER (Capital Structure), SIZE (Firm Size), INF (Inflation), GCG (Good Corporate Governance), ROA (Profitability)

Based on Table 8, the heteroscedasticity test was conducted using the Glejser test by regressing the absolute residual values on the independent variables. The results indicate that the probability values of all independent variables, namely capital structure (X1), firm size (X2), inflation (X3), and GCG (M), are greater than the significance level of 0.05. Therefore, it can be concluded that the regression model does not exhibit heteroscedasticity problems, indicating that the variance of the residuals is constant across observations.

Panel Regression Analysis

Table 9. Panel Data Regression Results (Main Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.526830	0.215965	-2.439430	0.0155
DER	-0.011929	0.004981	-2.394773	0.0174
SIZE	0.019412	0.007778	2.495770	0.0133
INF	0.023036	0.005610	4.106243	0.0001
GCG	0.006918	0.052260	0.132384	0.8948

Note: DER (Capital Structure), SIZE (Firm Size), INF (Inflation), GCG (Good Corporate Governance), ROA (Profitability)

The estimated panel data regression model under the random effects specification is formulated as follows:

$$ROA_{it} = -0.526830 - 0.011929DER_{it} + 0.019412SIZE_{it} + 0.023036INF_t + 0.006918GCG_{it} + \varepsilon_{it}$$

The panel regression results in Table 9 indicate that capital structure has a significant negative effect on profitability, while firm size and inflation have significant positive effects. GCG is found to be statistically insignificant.

Main Model

Hypothesis Testing

Based on the results presented in Table 9, capital structure has a significant negative effect on profitability (β = -0.011929; p = 0.0174), indicating that higher capital structure tends to reduce profitability, thereby supporting H1. Firm size shows a positive and significant effect on profitability (β = 0.019412; p = 0.0133), suggesting that larger firms benefit from efficiency advantages and economies of scale, thus H2 is supported. Inflation also has a significant positive impact on profitability (β = 0.023036; p = 0.0001), implying that energy firms are able to take advantage of rising price levels. H3 is accepted. In contrast, GCG is not statistically significant (β = 0.006918; p = 0.8948),

indicating no direct effect on profitability. Overall, the results imply that financial structure and macroeconomic circumstances, rather than governance procedures, are the main factors influencing profitability in energy sector companies.

Coefficient of Determination (R^2) (Main Model)
Table 10. Coefficient of Determination Results (R^2)

Statistic	Value
R-squared	0.113493
Adjusted R-squared	0.098075

According to Table 10, the independent variables account for about 11.35% of the variation in profitability, with additional factors outside the model accounting for the remaining variation, according to the R-squared value of 0.113493. The model's relatively low explanatory power is confirmed by the adjusted R-squared value of 0.098075, although the model remains statistically relevant for analysis.

Moderation Regression Analysis
Table 11. Moderation Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.745634	1.107106	-2.480009	0.0139
DER	-0.111628	0.050944	-2.191180	0.0295
SIZE	0.097954	0.036842	2.658730	0.0084
INF	0.010277	0.027243	0.377223	0.7064
GCG	1.646055	0.810126	2.031852	0.0433
DER×GCG	0.065787	0.033609	1.957409	0.0515
SIZE×GCG	-0.057456	0.026671	-2.154202	0.0323
INF×GCG	0.010045	0.019234	0.522259	0.6020

Note: DER (Capital Structure), SIZE (Firm Size), INF (Inflation), GCG (Good Corporate Governance), ROA (Profitability)

The estimated moderated panel regression model is formulated as follows:

$$ROA_{it} = -2.745634 - 0.111628DER_{it} + 0.097954SIZE_{it} + 0.010277INF_t + 1.646055GCG_{it} + 0.065787(DER \times GCG)_{it} - 0.057456(SIZE \times GCG)_{it} + 0.010045(INF \times GCG)_{it} + \varepsilon_{it}$$

These results in Table 11 indicate that GCG partially moderates the relationships between financial variables and profitability, with significant moderation only observed in the relationship between firm size and profitability.

Moderation Model
Hypothesis Testing
Based on Table 11, capital structure exhibits a significant negative effect on profitability (β = -0.111628; p = 0.0295), indicating that higher leverage reduces firm performance; therefore, H1 is supported. Firm size shows a positive and significant relationship with profitability (β = 0.097954; p = 0.0084), hence H2 is supported. In contrast, inflation is not statistically significant (β = 0.010277; p = 0.7064), suggesting that H3 is not supported. Regarding the moderating effects, GCG has a significant positive direct effect on profitability (β = 1.646055; p = 0.0433). The interaction between capital structure and GCG is not significant at the 5% level but is weakly significant at the 10% level (β = 0.065787; p = 0.0515), indicating that GCG has a weak moderating effect on the relationship between capital structure and profitability. Therefore, H4 is partially supported. The interaction between firm size and GCG is significant (β = -0.057456; p =

0.0323), indicating that H5 is supported. Meanwhile, the interaction between inflation and GCG is not significant (β = 0.010045; p = 0.6020), so H6 is not supported.

Coefficient of Determination (R^2)
Table 12. Coefficient of Determination (R^2)

Statistic	Value
R-squared	0.143889
Adjusted R-squared	0.117489

Based on Table 12, the independent variables, namely capital structure, firm size, inflation, GCG, and their interaction terms, account for 14.39% of the variation in profitability. Other factors not included in the model explain the remaining 85.61%. The adjusted R-squared value of 0.117489 indicates relatively low explanatory power, suggesting that the model has limited ability to capture variations in profitability.

DISCUSSION

The Influence of Capital Structure on Profitability

The results show that capital structure has a negative and significant effect on profitability. In the main model, DER has a coefficient of -0.011929 with a p-value of 0.0174 (< 0.05), while in the moderating model, it also shows a negative and significant effect with a coefficient of -0.111628 and a p-value of 0.0295. This indicates that an increase in capital structure is associated with a decrease in profitability. These findings suggest that firms in the energy sector tend to bear higher financial burdens when relying more on debt-based capital structure, supporting H1. The increase in DER leads to higher interest expenses and financial obligations, which ultimately reduce net income (Wardoyo et al., 2022).

This result is consistent with Kabichi and Bwana (2024), who find that higher debt usage increases financial risk and weakens firm performance. It also supports Arifin (2023), who argues that the impact of capital structure on profitability depends on how effectively debt is managed, where an inefficient capital structure may negatively affect performance. From the trade-off theory perspective, this finding indicates that firms may not have reached an optimal capital structure, as the costs of debt, such as bankruptcy costs and interest expenses, exceed their tax benefits (Voutsinas & Werner, 2025). In addition, signaling theory suggests that higher DER may be interpreted by investors as higher financial risk when it is not supported by strong operational performance (Febriyanti & Hasibuan, 2025).

The Influence of Firm Size on Profitability

The estimation results show that firm size has a positive coefficient of 0.019412 with a p-value of 0.0133 (< 0.05) in the main model, and a coefficient of 0.097954 with a p-value of 0.0084 in the moderating model. These results indicate that firm size has a positive and significant effect on profitability. Therefore, H2 is accepted. This finding suggests that larger firms tend to achieve higher profitability. Firm size reflects the scale of a company's assets, operational capacity, and resource availability, where larger firms are generally able to benefit from economies of scale, better access to financing, and stronger market competitiveness (Ghofar et al., 2025).

Empirically, this result is consistent with Rahman and Yilun (2021), who find that firm size has a positive and significant effect on profitability, indicating that larger companies tend to generate higher profitability. However, it differs from Yadav et al. (2022), who report that firm size has no significant effect on profitability. From a theoretical

perspective, signaling theory suggests that firm size can serve as a signal of stability and credibility to investors (Komara et al., 2020). In this study, the significant positive effect implies that firm size provides a meaningful signal that contributes to higher profitability, as larger firms are perceived to have stronger operational capacity and financial resilience.

The Influence of Inflation on Profitability

The empirical results show that inflation has a coefficient of 0.023036 with a p-value of 0.0001 (< 0.05) in the main model, indicating a positive and significant effect on profitability. Therefore, H3 is supported in the main model. However, in the moderating model, inflation becomes insignificant with a coefficient of 0.010277 and a p-value of 0.7064. However, this effect is not robust in the moderated model, possibly because firms in the energy sector are able to adjust their pricing faster than the increase in costs, allowing them to maintain or improve profit margins. However, when additional variables and interaction effects are included, the impact of inflation becomes insignificant, indicating that its effect is not stable across models.

Empirically, this result is consistent with Tërstena et al. (2023), who find that inflation can have a positive effect on profitability when firms are able to adjust prices effectively. However, it contrasts with Muthalib et al. (2019) and Tarkom & Ujah (2023), who report that inflation has no significant effect on profitability, suggesting that firms may absorb inflationary pressures through efficiency adjustments. From a theoretical perspective, inflation reflects macroeconomic conditions that may influence firm performance (Tarkom & Ujah, 2023). In the context of signaling theory, firms that are able to maintain profitability during inflationary periods may signal strong managerial capability and operational adaptability to investors (Fatimah et al., 2026). However, the mixed results in this study indicate that the influence of inflation is not consistently strong when other firm-specific factors are considered.

The Moderating Role of GCG on the Relationship Between Capital Structure and Profitability

The regression results show that the interaction term between capital structure and GCG (DER×GCG) has a coefficient of 0.065787 with a p-value of 0.0515. This result is not significant at the 5% level but is weakly significant at the 10% level. Therefore, H4 is partially supported, indicating that GCG has a weak moderating effect on the relationship between capital structure and profitability. The positive interaction coefficient suggests that stronger governance may slightly reduce the negative effect of capital structure on profitability, although the effect is not strong enough to be considered significant at the conventional 5% level.

Theoretically, GCG mechanisms should reduce agency conflicts and enhance financial decision-making, including capital structure management, according to agency theory (Mardhiah & Risman, 2026). In addition, signaling theory argues that strong governance practices can enhance investor confidence and improve the effectiveness of financial policies (Waruwu et al., 2025). However, the weak moderating effect found in this study indicates that GCG has not functioned strongly as a strategic governance mechanism in this relationship (Arifin, 2023). This may suggest that GCG practices in the observed firms are relatively uniform or mainly implemented as a compliance requirement rather than as a strategic mechanism that enhances the effectiveness of capital structure in improving profitability

The Moderating Role of GCG on the Relationship Between Firm Size and Profitability

According to the regression results, the moderating impact is statistically significant because the interaction term between firm size and GCG (SIZE×GCG) has a coefficient of -0.057456 and a p-value of 0.0323 (< 0.05). Therefore, H5 is supported. However, the negative sign of the interaction coefficient suggests that GCG weakens the positive relationship between firm size and profitability. This implies that although larger firms tend to have higher profitability, the strengthening of governance practices may reduce the magnitude of this effect.

From a theoretical perspective, signaling theory suggests that larger firms with strong governance should provide stronger signals of stability and performance to investors (Komara et al., 2020). Agency theory also argues that GCG can improve managerial efficiency and resource utilization, particularly in larger firms (Mardhiah & Risman, 2026). However, the results of this study indicate that GCG does not always enhance the benefit of firm size on profitability (Lestari et al., 2025). This finding may be explained by the possibility that GCG implementation in the observed firms is relatively standardized or compliance-oriented, which limits its ability to amplify the positive impact of firm size on profitability (Ghofar et al., 2025). As a result, while firm size remains an important determinant of profitability, its effect may be reduced in firms with stronger governance structures.

The Moderating Role of GCG on the Relationship Between Inflation and Profitability

According to the regression results, the moderating impact is not statistically significant because the interaction term between inflation and GCG (INF×GCG) has a coefficient of 0.010045 with a p-value of 0.6020 (> 0.05). Therefore, H6 is rejected. This finding indicates that GCG does not strengthen or weaken the relationship between inflation and profitability. In other words, firms' ability to respond to inflationary conditions is not significantly influenced by their governance quality.

From a theoretical perspective, inflation is an external macroeconomic factor that affects firms regardless of internal governance mechanisms (Tërstena et al., 2023). While signaling theory suggests that strong governance should enhance investor confidence and indicate better adaptability, the insignificant result shows that this signal is not strong enough in explaining the relationship between inflation and profitability (Rosita & Nuryaman, 2025). In addition, agency theory emphasizes that governance mechanisms mainly focus on internal managerial issues rather than external economic shocks (Perdana et al., 2024). Therefore, the findings imply that GCG has a limited moderating effect on the link between inflation and profitability since macroeconomic factors are more important in determining company performance.

CONCLUSION

This study examines the effect of capital structure, firm size, and inflation on profitability in energy sector companies, as well as the moderating role of GCG. The results of the main regression model show that capital structure and inflation have a significant effect on profitability, while firm size also shows a significant positive effect. These findings indicate that financial structure and macroeconomic conditions play an important role in determining firm profitability.

In the moderating model, GCG does not consistently moderate the relationships between capital structure, firm size, inflation, and profitability. The interaction between firm size

and GCG is statistically significant, indicating that GCG moderates the relationship between firm size and profitability. Meanwhile, the interaction between capital structure and GCG is only weakly significant at the 10% level, and the interaction between inflation and GCG is not significant. Overall, these findings indicate that GCG has a limited moderating role, with its effect mainly observed in the firm size–profitability relationship.

These results provide implications for both theory and practice. From a theoretical perspective, the findings support signaling theory and trade-off theory in explaining how capital structure and macroeconomic conditions influence profitability. However, the weak moderating role of GCG suggests that governance mechanisms may not yet function as an effective value-adding factor and are more likely implemented as compliance requirements.

From a practical perspective, firms are advised to focus on optimizing capital structure decisions and developing adaptive strategies to inflation, as these factors significantly affect profitability. Meanwhile, improvements in governance quality are still necessary to enhance its strategic role in corporate financial performance.

LIMITATION

This study is limited to the energy sector and a limited number of variables; thus, subsequent studies are recommended to broaden the sample scope, include additional variables, and explore alternative moderating factors to obtain more comprehensive results.

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DECLARATION OF CONFLICTING INTERESTS

The researchers declare the absence of any competing interests in conducting, composing, or publishing this work.

REFERENCES

Agmas, W. F. (2020). Impacts of capital structure: profitability of construction companies in Ethiopia. *Journal of Financial Management of Property and Construction*, *25*(3), 371-386. https://doi.org/10.1108/JFMPC-08-2019-0072

Al Yami, M., Ajmal, M. M., & Balasubramanian, S. (2022). Does size matter? The effects of public sector organizational size'on knowledge management processes and operational efficiency. *VINE Journal of Information and Knowledge Management Systems*, *52*(5), 670-700. https://doi.org/10.1108/VJIKMS-07-2020-0123

Arifin, A. H. (2023). Moderasi Good Corporate Governance pada pengaruh intellectual capital terhadap kinerja keuangan. *Ekonomi, Keuangan, Investasi dan Syariah*, *4*(3), 967-977. https://doi.org/10.47065/ekuitas.v4i3.2556

Bank Indonesia. (2022). *Laporan Keuangan Tahunan Bank Indonesia Tahun 2022 Bank Indonesia Annual Financial Statements 2022*. Bank Indonesia. https://www.bi.go.id/id/publikasi/laporan/default.aspx

Central Agency of Statistics (Badan Pusat Statistik/BPS). (2023, January 2). *Inflasi year-on-year (y-on-y) pada Desember 2022 sebesar 5,51 persen. Inflasi tertinggi*

terjadi di Kotabaru sebesar 8,65 persen. BPS. https://www.bps.go.id/id/pressrelease/2023/01/02/1949/inflasi-year-on-year--y-on-y--pada-desember-2022-sebesar-5-51-persen--inflasi-tertinggi-terjadi-di-kotabaru-sebesar-8-65-persen-.html

Connelly, B. L., Certo, S. T., Reutzel, C. R., DesJardine, M. R., & Zhou, Y. S. (2025). Signaling theory: State of the theory and its future. *Journal of Management*, *51*(1), 24-61. https://doi.org/10.1177/01492063241268459

Fatimah, F., Tubastuvi, N., Handayani, E., & Fauziridwan, M. (2026). Capital structure and firm value in consumer cyclicals: The weakening moderating role of profitability during market volatility 2021-2024. *Owner: Riset dan Jurnal Akuntansi*, *10*(1), 117-133. https://doi.org/10.33395/owner.v10i1.2937

Febriyanti, N. P. L., & Hasibuan, H. T. (2025). The relationship between capital structure and profitability with firm value (a study of LQ45 Index companies listed on the Indonesia Stock Exchange (IDX) for the 2021–2023 Period). *International Journal of Economics, Management and Accounting*, *2*(4), 239-250. https://doi.org/10.61132/ijema.v2i4.853

Ghofar, A., Kusumadewi, A. W., & Widiastutik, R. N. (2025). Does firm size strengthen the relationship between digital transformation and capital structure? A case in ASEAN nations. *Cogent Business & Management*, *12*(1), 2570503. https://doi.org/10.1080/23311975.2025.2570503

Ghozali, I. (2021). *Aplikasi Analisis Multivariate*. Badan Penerbit Universitas Diponegoro.

Irawati, D., & Fadhila, L. N. (2024). Do underlying assets, duration, default risk level, Sukuk liquidity, and profitability affect Sukuk yield? *International Journal of Accounting & Finance in Asia Pacific,* *7*(1), 46–61. https://doi.org/10.32535/ijafap.v7i1.2898

Kabichi, R., & Bwana, K. M. (2024). Impact of capital structure on profitability of commercial banks in Tanzania. *Journal of European Economy*, *23*(4), 599-614. https://doi.org/10.35774/jee2024.04.599

Komara, A., Ghozali, I., & Januarti, I. (2020, March). Examining the firm value based on signaling theory. In *1st International Conference on Accounting, Management and Entrepreneurship (ICAMER 2019)* (pp. 1-4). Atlantis Press. https://doi.org/10.2991/aebmr.k.200305.001

Lestari, E. D., Malini, H., & Wendy, W. (2025). The effect of debt to equity ratio, sales growth on profitability with good corporate governance as a moderating variable in the manufacturing sector listed on the Indonesian Stock Exchange. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis*, *13*(3), 2735-2748. https://doi.org/10.37676/ekombis.v13i3.7662

Majidah, M., & Galih Pangestu, F. I. (2022). Determinant factors of corporate social responsibility disclosure. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 2868–2878. https://doi.org/10.46254/EU05.20220560

Mardhiah, A., & Risman, A. (2026). Moderating role of good corporate governance in the effects of green finance, leverage, and profitability on firm value. *Asian Journal of Applied Business and Management*, *5*(1), 227-246. https://doi.org/10.55927/ajabm.v5i1.16

Muthalib, A. A., Adam, P., Nur, M., Saenong, Z., Suriadi, L. O., & Baso, J. N. (2019). The effect of crude oil prices on inflation, interest rates and economic growth in Indonesia. *International Journal of Energy Economics and Policy*, *9*(5), 14-19. https://doi.org/10.32479/ijeep.7829

Nugraha, N. M., Ramadhanti, A. A., & Amaliawiati, L. (2021). Inflation, leverage, and company size and their effect on profitability. *Journal of Applied Accounting and Taxation*, *6*(1), 63-70.

Perdana, A. W., Setyaningrum, R. P., Dasman, S., & Aminah, S. (2024). Analisis pengaruh manajemen risiko terhadap profitabilitas perusahaan dengan good corporate governance sebagai variabel moderasi. *Jurnal Manajemen Perbankan Keuangan Nitro*, *7*(2), 120-129. https://doi.org/10.56858/jmpkn.v7i2.355

Prasetyo, C. Y., & Prasetio, J. E. (2025). The effect of firm size, profitability, audit quality, and dividend policy on earnings management at Indonesian conventional banking. *International Journal of Applied Business and International Management, 10*(3), 505–520. https://doi.org/10.32535/ijabim.v10i3.4270

Rahman, J. M., & Yilun, L. (2021). Firm size, firm age, and firm profitability: evidence from China. *Journal of Accounting, Business and Management*, *28*(1), 101-115. https://doi.org/10.31966/jabminternational.v28i1.829

Rengganis, P., Widarwati, E., Nurmalasari, N., & Sopiawadi, M. (2023, January). Intellectual capital and firm performance: The mediating role of governance. In *Proceeding of National Conference on Accounting & Finance* (pp. 465-474).

Rosita, H., & Nuryaman, N. (2025). Factors influencing capital structure and its impact toward profitability in consumer goods manufacturing companies listed in the IDX for the 2019-2023 period. *Journal of Accounting and Finance Management*, *5*(6), 1734-1747. https://doi.org/10.38035/jafm.v5i6.1415

Simbolon, S., & Simbolon, D. M. (2024). Sustainable workforce in a green era: Indonesia's energy sector transition. *International Journal of Energy Economics and Policy*, *14*(3), 702-710. https://doi.org/10.32479/ijeep.15842

Simon, F., Rachmawati, S., & Murwarningsari, E. (2025). The role of tangibility, business risk, and managerial ownership on capital structure. *International Journal of Accounting and Finance in Asia Pasific, 8*(2), 319–334. https://doi.org/10.32535/ijafap.v8i2.3531

Sugiyono, D. (2021). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Tarkom, A., & Ujah, N. U. (2023). Inflation, interest rate, and firm efficiency: The impact of policy uncertainty. *Journal of International Money and Finance*, *131*, 102799. https://doi.org/10.1016/j.jimonfin.2022.102799

Tërstena, A., Deda, G., Todorova, S., Mehmeti, I., & Krasniqi, S. (2023). The impact of inflation on the profitability of businesses: Evidence from Kosovo. *Journal of Educational and Social Research*, *13*(4). https://doi.org/10.36941/jesr-2023-0106

Voutsinas, K., & Werner, R. A. (2025). Trade-off theory vs. the pecking order hypothesis: Japanese evidence on capital structure under financial constraints. *Structural Change and Economic Dynamics*, *74*, 944-962. https://doi.org/10.1016/j.strueco.2025.06.004

Wardoyo, D. U., Khotimah, D. K., & Lutfiany, K. I. (2022). Pengaruh konflik kepentingan, kualitas audit, leverage, dan profitabilitas terhadap konservatisme akuntansi. *AKUA: Jurnal Akuntansi dan Keuangan*, *1*(1), 09-17. https://doi.org/10.54259/akua.v1i1.138

Waruwu, M., Satriawan, B., Sumantri, S., & Lestari, W. D. (2025). Peran struktur modal terhadap profitabilitas dengan good corporate governance (GCG) sebagai variabel moderasi. *Jurnal Pendidikan Akuntansi*, *13*(1), 53-60.

Wati, E. R., Dillak, V. J., & Aminah, W. (2021). Pengaruh pertumbuhan perusahaan, leverage, profitabilitas, dan efisiensi operasional terhadap nilai perusahaan (Studi pada perusahaan sub sektor properti dan real estate yang terdaftar di Bursa Efek Indonesia pada tahun 2016–2019). *E-Proceeding of Management, 8*(5), 5315–5322.

Yadav, I. S., Pahi, D., & Gangakhedkar, R. (2022). The nexus between firm size, growth, and profitability: new panel data evidence from Asia–Pacific markets. *European Journal of Management and Business Economics*, *31*(1), 115-140. https://doi.org/10.1108/EJMBE-03-2021-0077

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