Analyzing stock returns in Indonesian state-owned firms: NPM, ROE and GCG factors

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Abstract

This research aims to investigate the factors influencing the stock returns of state-owned enterprises (SOE) in Indonesia. The study focuses on net profit margin (NPM), return on equity (ROE) and good corporate governance (GCG) as potential determinants. The research population comprises 20 SOE companies registered at the Indonesia Stock Exchange (IDX) from 2017 to 2022. The purposive sampling method is employed to select a sample of 6 companies that meet the specific criteria outlined in the research objectives. Panel data regression with common effects is used as the research technique. The results reveal that net profit margin (NPM) and return on equity (ROE) do not exert a significant impact on the stock returns of SOE companies listed on the IDX. However, good corporate governance (GCG) is identified as a strong negative factor influencing the stock returns of these companies. The findings suggest that investors and stakeholders should carefully consider the role of good corporate governance (GCG) when evaluating and making decisions related to state-owned enterprises (SOE) stocks in the Indonesian market. Implementing robust governance practices may be crucial for mitigating potential negative effects on stock returns. The practical implications of these findings emphasize the need for policymakers, regulators and company management to enhance GCG practices to enhance overall performance and sustain investor trust in SOE stocks.

1. Introduction

The necessity for enterprises to establish credibility is increasing as a larger number of them take action towards becoming public. This is true for investors as well as customers. The effectiveness of corporate governance has emerged as a pivotal factor given that shortcomings in this realm can result in a loss of investor confidence and reluctance to invest capital, thereby impeding the company's capacity to secure funds. A thorough analysis of trading data from the Indonesian Stock Exchange spanning 2017 to 2022 has unveiled a substantial investor base exceeding one million [1]. This significant influx of investors contributes to the dynamic fluctuations in a company's stock demand and supply influencing the stock price and introducing inherent investment risks. The rate of return on investment serves as a compelling motivator for investors in addition to risk considerations.

Prudent decision-making by investors in stock investments necessitates a careful balance between a company's rate of return and associated risks [2, 3]. The evaluation of a company's suitability involves a comprehensive assessment of its performance through the lenses of corporate governance and financial indicators. Corporate governance gauged by metrics such as the Corporate Governance Perception Index (CGPI) draws on external evaluations from entities like the Indonesian Institute of Corporate Governance (IICG) and internal assessments, including self-assessment scores guided by regulatory agencies [4]. Publicly registered state-owned enterprises (SOE) are strongly encouraged to uphold good corporate governance safeguarding investor trust and national assets. Financial performance as evaluated through key financial ratios such as net profit margin (NPM) and return on equity (ROE) finds representation in annual financial reports.

Previous research findings on the correlation between net profit margin and stock return have exhibited variability with some studies indicating significant positive correlations [5] while others failed to establish a significant impact [6]. Similar variability characterizes research on return on equity with certain studies demonstrating a positive influence [7] and others asserting no significant impact on stock returns [8]. There has also been debate about the relationship between good corporate governance and stock return with some research finding a substantial positive correlation [9] and others asserting the absence of a significant effect [10]. "Analyzing stock returns in Indonesian state-owned firms: NPM, ROE and GCG variables" is a study that seeks to shed light on the inconsistent results of prior studies as well as the phenomenon of stock supply and demand. Additionally, it seeks to empower investors to make informed decisions by identifying the interplay between corporate governance and financial performance.

This study seeks answers to several questions to address the gaps in existing literature and contribute meaningfully to the field. What is the relationship between net profit margin (NPM) and stock return in Indonesian state-owned firms? How does return on equity (ROE) impact stock returns in these firms? What is the influence of good corporate governance (GCG) on stock returns in the context of Indonesian state-owned enterprises? To what extent does net profit margin (NPM) influence good corporate governance (GCG) in Indonesian state-owned firms? How does return on equity (ROE) impact the level of good corporate governance (GCG) in publicly listed state-owned enterprises in Indonesia? Does good corporate governance (GCG) act as a mediator in the relationship between net profit margin (NPM) and stock returns for Indonesian state-owned firms? In what way does good corporate governance (GCG) mediate the effectiveness of return on equity (ROE) on the returns of stock in the context of publicly listed state-owned enterprises in Indonesia?

2. Literature Review

2.1. Net Profit Margin (NPM)

According to Gitman, net profit margin (NPM) serves as a crucial profitability indicator for evaluating a company's capacity to generate profit from its net sales [11]. High NPM levels signify efficient performance indicating a company's ability to generate profits after covering operating costs and expenses. Investors often consider NPM as a determining factor in investment decisions as larger NPMs demonstrate a company's efficiency in generating net profits. Dita & Murtaqi emphasize that high net profit indicates effective management and control of operating costs showcasing a company's ability to withstand industry competition [5]. A high NPM attracts investors signifying a company's potential to increase profits and consequently higher stock returns.

2.2. Return on Equity (ROE)

Gitman defines return on equity (ROE) as a profitability ratio measuring a company's ability to earn profits from its own capital [11]. A high ROE indicates optimal performance, generating maximum profit based on equity. An increase in ROE positively impacts a company's sales value contributing to higher stock prices and returns Carlo [7]. Ganto, et al. [12] emphasize that ROE reflects the efficiency of companies in using their capital to earn profits. A high ROE indicates efficient capital use and substantial shareholder profits. Conversely, a low ROE may decrease investor confidence, potentially leading to stock price declines and reduced stock returns.

2.3. Good Corporate Governance (GCG)

Corporate governance is defined as a set of methods guiding and controlling a company's operations based on stakeholders' wishes in line with the Indonesian Institute of corporate governance (IICG) [4, 13]. GCG acts as a control tool over corporate decisions considering management behavior and protecting investors and creditors [4, 14]. Corporate governance principles outlined in the financial services authority declaration include transparency, accountability, responsibility, independence and fairness [15]. A positive corporate governance report signals potential and existing investors about the company's transparent, accountable, responsible and independent operations influencing investor confidence and stock returns [4]. This alternative control mechanism, Good Corporate Governance (GCG) distinguishes

itself by extending its focus beyond the interests of company management to encompass the protection of shareholders and creditors [16]. The underlying principles of GCG serve as a framework to guarantee that businesses operate in a manner that is transparent, accountable, responsible and independent. This framework is designed to ensure that equity and accountability are integral to all decisions and actions undertaken by the company.

2.4. Stock Return (SR)

A return rate as defined by Fabozzi reflects the change in the value of an investment over a specific period [17]. Stock return, encompassing dividends and capital gain/loss is a key indicator for investors to evaluate investment performance and success [18, 19]. Investors seek stock returns as incentives for capital invested with positive returns indicating profitable investments [20]. Stock return serves as a main indicator for investors to assess their investment performance and gauge the success or failure of an investment in delivering expected results [18, 19].

2.5. Hypothesis Development

Profitability ratios such as net profit margin (NPM) play a crucial role in assessing a company's ability to earn profit from net sales [21, 22]. Prior research suggests a positive impact of NPM on stock returns [9, 23]. However, conflicting findings exist with some studies indicating no impact [24]. Return on equity (ROE) reflects management's performance in utilizing company equity to make a profit [25, 26]. Positive ROE contributes to increased stock returns [11, 27] while conflicting results suggest no influence [12]. There has been debate on the impact of good corporate governance on stock returns. Several investigations have found a beneficial relationship [13] while other studies have found a lack of association [22].

The following initial hypotheses are proposed based on the identified gaps and inconsistencies:

H_1: NPM affects stock returns.
H_2: ROE has an impact on stock returns.
H_3: GCG affects stock returns.
H_4: NPM affects GCG.
H_5: ROE has an impact on GCG.
H_6: GCG mediates the effect of NPM on stock returns.
H_7: GCG mediates the effectiveness of ROE on stock returns.

3. Methodology

This study adopts a quantitative research approach specifically falling within the realm of secondary data analysis [28, 29]. Secondary data sourced from existing records such as company annual reports accessible through the IDX website [30] forms the basis of this research. The methodology employs panel data, a combination of time series and cross-sectional data. Time series data cover a single object across multiple time periods while cross-sectional data encompass multiple objects at a single time point [31, 32]. The study's independent variables include net profit margin (NPM), return on equity (ROE) and good corporate governance (GCG) while the dependent variable is stock returns.

Table 1 shows the operationalization of variables.

Table 1.
Presents the operational variables.

Variables	Definition	Measurement
NPM	Measuring a company's ability to gain earnings from sales.	$NPM = \dfrac{Net\ profit}{Sales}$
ROE	Measuring the level of profit generated from the company's capital.	$ROE = \dfrac{Earnings\ available\ for\ common\ stockholder}{Common\ stock\ equity}$
GCG	Mechanisms that have direct control over the company so its operations would be according to stakeholder expectations.	Self-assessment in accordance with minister of state-owned enterprises law No. PER-01/MBU/2011 concerning GCG implementation in SOEs.
Stock return	Changes in the value of an investment over a certain period.	$Rit = \dfrac{(Pt1 - Pt) + Cd}{Pt}$

The study's sample criteria focus on state-owned enterprises (SOE) with public status registered during the period 2017–2022. The selected companies must have complete annual financial reports for the years 2017–2022 not undergone stock splits within this timeframe conduct self-assessment in compliance with Minister of State of Enterprise No. PER-01/MBU/2011 laws regarding GCG implementation within SOE and not have experienced negative NPM and ROE during the same period. The research sample comprises six companies: Perseroan Terbatas (PT) Wijaya Karya, PT Timah, PT Jasa Marga, PT Waskita Karya, PT Semen Batu Raja and PT Pembangunan Perumahan. Purposive sampling is employed where the selection of samples is based on specific considerations [33]. This method allows for the strategic selection of companies that meet the predetermined criteria ensuring the relevance of the chosen sample to the research objectives.

Panel data regression using the ordinary least squares (OLS) method is the chosen technique for data analysis. The ordinary least squares method helps develop a linear regression model. The researchers perform Chow, Hausman and Lagrange assessments to determine the most suitable regression model among common effect models, fixed effect models or random effect models before conducting the regression estimation [34].

The panel data regression with common effects used in this study involves analyzing the relationship between the independent variables (NPM, ROE and GCG) and the dependent variable (stock returns) across multiple companies and over time. Panel data regression takes into account both time-specific effects and individual-specific effects (company-specific attributes) as opposed to simple linear regression. This model offers a more comprehensive understanding of the factors influencing stock returns in state-owned enterprises. This research incorporates all three factors simultaneously unlike past studies that may have focused on individual aspects (NPM, ROE or GCG). The inclusion of GCG as an independent variable adds a governance dimension not often explored in similar studies. The use of panel data regression allows for a more nuanced analysis by considering both individual and time-specific effects providing a holistic view of the factors influencing stock returns in state-owned enterprises. This approach enhances the robustness of the findings and contributes to a more comprehensive understanding of the dynamics at play.

4. Results

4.1. Descriptive Statistics Test

Descriptive statistics offer a snapshot of essential values in the observed variable encompassing minimum, maximum, mean and default values (standard deviation) [30, 35].

Table 2 presents the results of descriptive statistical tests.

Table 2.
Operational variables overview.

Descriptive statistics	Y	X_1	X_2	X_3
Mean	0.151	0.092	0.129	89.094
Median	0.037	0.072	0.130	88.153
Maximum	1.815	0.280	0.393	97.170
Minimum	-0.831	0.015	0.020	75.200
Std. dev.	0.589	0.066	0.082	5.451
Skewness	1.106	1.556	1.031	-0.475
Kurtosis	4.026	4.631	4.486	3.212
Jarque-Bera	8.918	18.525	9.686	1.422
Probability	0.012	0.000095	0.008	0.491110
Sum	5.430	3.327	4.648	3207.396
Sum sq. dev.	12.156	0.152	0.235	1040.066
Observations	36	36	36	36

According to the findings, discernible variations in stock return values among companies are apparent. PT Timah exhibits the lowest stock return while PT Waskita Karya boasts the highest. In the NPM variable, PT Semen Batu Raja records the highest value with PT Timah presenting the lowest NPM. Moreover, PT Waskita Karya showcases the highest ROE while PT Timah has the lowest. In terms of GCG, PT Waskita Karya ranks highest in stark contrast to PT Timah, which has the lowest. Consequently, the descriptive statistics shed light on performance and governance variations among the observed companies.

4.2. Classical Assumption Test

Classical assumption tests validate research data prior to advanced testing which involves three crucial assessments: normality, multicollinearity and heteroscedastic [30, 35].

Figure 1 illustrates the data normality test results.

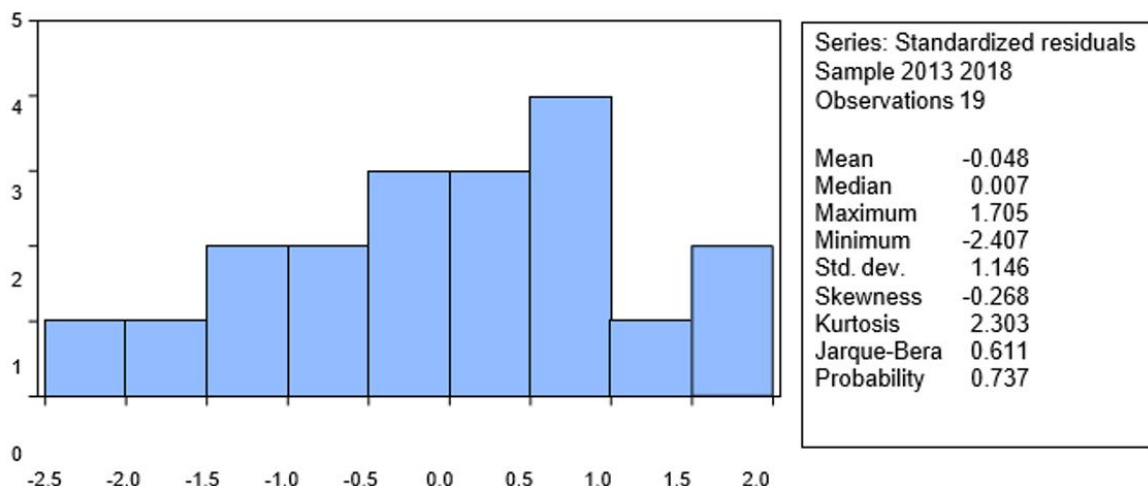|	
Series: Standardized residuals	
Sample 2013 2018	
Observations 19	
Mean	-0.048
Median	0.007
Maximum	1.705
Minimum	-2.407
Std. dev.	1.146
Skewness	-0.268
Kurtosis	2.303
Jarque-Bera	0.611
Probability	0.737

Figure 1.
Normality test results.

The normality test indicates a p-value of 0.736613 surpassing 0.05 confirming a normal distribution in residual values [30, 35].

Multicollinearity testing reveals correlated values excluding the main diagonal under 0.8 signifying no multicollinearity between independent variables [30, 35].

Table 3 presents the multicollinearity test results.

Table 3.
Multicollinearity test results.

Variables	X_1	X_2	X_3
X_1	1.000	-0.051	-0.096
X_2	-0.051	1.000	-0.270
X_3	-0.096	-0.270	1.000

Heteroscedastic testing results in prob. values of 0.639, 0.685, and 0.126 for NPM, ROE and GCG, respectively, all exceeding 0.05 indicating no violation of heteroscedastic assumptions [30, 35].

Table 4 presents the heteroscedastic test results.

Table 4.
Heteroscedastic test results.

Variable	Coefficient	Std. error	t-statistic	Prob.
C	-4.044	3.351	-1.207	0.246
X_1	-1.238	2.583	-0.480	0.639
X_2	-0.875	2.112	-0.414	0.685
X_3	0.060	0.037	1.621	0.126

4.3. Selection of Data Panel Regression Estimate Techniques

Chow, Hausman and Lagrange-multiplier assessments determine the most accurate regression estimation technique for panel data [30, 35].

Table 5 presents the chow test results.

Table 5.
Chow test results.

Redundant fixed effects equation: Untitled

Test cross-section fixed effects

Effects test	Statistic	d.f.	Prob.
Cross-section F	1.288	(5,10)	0.342
Cross-section chi-square	9.445	5	0.093

The Chow test in Table 5 shows the probability of the F test (0.342) surpassing the significance level of $\alpha = 0.05$. Consequently, the null hypothesis (H_0) is accepted while the alternative hypothesis (Ha) is rejected. This leads to the conclusion that the most appropriate estimation technique is based on a common effect model [30, 35].

Table 6 presents the Hausman test results.

Table 6.
Hausman test results.

Correlated random effects: Hausman testequation: untitled

Test cross-section random effects

Test summary	Chi-sq. statistic	Chi-sq. d.f.	Prob.
Cross-section random	3.362	3	0.339

The probability of a random cross-section (0.339) exceeds the significance value of 0.05 as per the Hausman test. Therefore, H_0 is accepted signifying that the preferred estimation approach relies on the random effect model [30, 35].

Table 7 presents the Lagrange-multiplier test results.

Table 7.
Lagrange-multiplier test results

Measurement	Test hypothesis cross-section	Time	Both
Breusch-Pagan (Sig.)	0.288 (0.592)	0.504 (0.478)	0.792 (0.374)

The Lagrange-multiplier test indicates that the Breusch-Pagan value is greater than $\alpha = 0.05$ specifically 0.592. Consequently, the model chosen for estimation is the common effect model [30, 35].

4.4. Hypothesis Test

The common effect model is chosen for the regression equation [30, 35] based on Chow, Hausman and Lagrange-multiplier tests.

Table 8.
Common effect model results.

Variable	Coefficient	Std. error	t-statistic	Prob.
C	6.296	2.260	2.786	0.014
$X_1 \rightarrow Y$	-5.088	3.074	-1.655	0.119
$X_2 \rightarrow Y$	-3.000	2.182	-1.375	0.189
$X_3 \rightarrow Y$	-0.073	0.026	-2.838	0.013
$X_1 \rightarrow X_3$	-9.409	13.776	-0.683	0.499
$X_2 \rightarrow X_3$	-18.551	11.135	-1.666	0.105
Weighted statistics				
R-squared	0.419	Mean dependent var.		-1.311
Adjusted R-squared	0.303	S.D. dependent var		1.224
S.E. of regression	1.257	Sum squared resid		23.695
F-statistic	3.603	Durbin-Watson stat.		2.305
Prob(F-statistic)	0.039			
Unweighted statistics				
R-squared	0.167	Mean dependent var		-1.226
Sum squared residuals	27.188	Durbin-Watson stat.		1.753

The hypothesis test involves t-tests, model validity tests and determination coefficient tests (adjusted R^2) [30, 35].

The t-test is employed to gauge the impact of independent variables on the dependent variable. The critical criterion is a probability (p-value) below 0.05 indicating a significant influence [30, 35]. The partial test outcomes from Table 8 reveal that the probability value of NPM is 0.119 (> 0.05) rejecting the alternative hypothesis (Ha) and concluding that NPM has no significant impact on stock return. Similarly, for ROE, the probability value is 0.189 (> 0.05) suggesting that ROE has no meaningful impact on stock returns. In contrast, GCG with a probability value of 0.013 (< 0.05) rejects the zero hypotheses (H$_0$) implying that GCG has a major negative impact on stock returns. Furthermore, both NPM and ROE yield results showing their insignificant effect on GCG with p-values greater than 0.05 specifically 0.499 and 0.105.

This study employs the Sobel test to confirm its mediation effect in addition to the partial test [36-38]. The mediation value of GCG on NPM and stock returns is 0.355 and the mediating value of GCG on ROE and stock returns is 0.418 based on the Sobel test results. These results have values smaller than the t-table (1.96) leading to the conclusion that GCG is unable to mediate the impact of NPM and ROE on stock returns.

The study proceeds with a model validity test to evaluate whether the regression model used is appropriate and valid following partial testing and mediation. This test uses the statistical value of F and the research outcomes indicate that the prob. value of the F-statistic is 0.039 (< 0.05) signifying that these regression models are deemed worthy of use [30, 35].

The determination coefficient test is the final step in calculating how efficiently the independent variables predict the dependent ones. The adjusted R^2 value from Table 8 is 0.303 indicating that approximately 30.255 percent of stock return performance can be explained by NPM, ROE and GCG. The majority of 69.745 percent is presumed to be described by other factors excluded from this research [30, 35].

4.5. Discussion

The research findings indicate that net profit margin (NPM) has no significant impact on stock returns aligning with Herman's previous study that reached a similar conclusion [6]. Factors like the dividend payout dependent on company decisions such as expansion plans and substantial data fluctuations in the research contribute to the difficulty in establishing clear patterns of NPM's influence on stock returns.

Similarly, the study reveals that return on equity (ROE) also lacks a significant impact on stock returns. This result is in line with Putra's earlier research suggesting that a company's profit being smaller than its available capital might explain the ineffectiveness of ROE on stock returns [8]. Decisions related to business expansion and relatively small variability in return gains could be additional factors influencing these results. Investors may opt to sell stocks during the survey period due to dissatisfaction with the low ROE.

In contrast, good corporate governance (GCG) in this study demonstrates a considerable negative effect on stock returns consistent with previous research by Noviantari, et al. [9]. This negative impact may be attributed to the time considerations in GCG implementation and government intervention in State-Owned Enterprises (SOE). The prolonged implementation periods and government interference can impact a positive assessment of GCG notwithstanding the associated risks of information leakage and corruption.

Moreover, GCG does not act as a mediator between the effects of NPM and ROE on stock returns in SOE companies. This is explained by the fact that SOE companies automatically adhere to GCG principles [13, 39]. Consequently, when fully implemented, GCG's role as a mediator influencing NPM, ROE and stock returns does not occur. GCG implementation has become an integral element of the company's operations rendering it no longer a moderator in the

relationship between NPM, ROE and stock returns. Since these companies directly apply GCG, there is no apparent mediation in the influence of NPM and ROE on stock returns when GCG is already an integral part of their functioning.

5. Conclusion

In a nutshell, the analysis of the research findings and preceding discussions yields several noteworthy conclusions. Firstly, it becomes apparent that neither net profit margin (NPM) nor returns on equity (ROE) significantly influence the stock returns of state-owned enterprises (SOE). These variables exhibit no substantial correlation with stock returns in the context of this research despite their common usage as financial performance indicators. Secondly, good corporate governance (GCG) reveals a noteworthy negative impact on SOE stock returns aligning with earlier studies conducted by Noviantari, et al. [9]. Factors associated with GCG implementation in SOE such as government intervention and a lack of market incentives contribute to this observed negative impact. The combined influence of NPM, ROE, and GCG explains only approximately 30.255% of the variability in SOE stock returns. This indicates that a considerable portion of stock return variability remains unexplained by these variables suggesting the presence of other influential factors requiring further exploration.

For investors, the recommendations emphasize diversification of portfolios in light of the limited impact of NPM, ROE, and GCG on SOE stock returns. Diversifying across different sectors or companies is proposed as a risk reduction strategy. Investors are urged to conduct in-depth fundamental analyses to gain insights into a company's financial condition and growth potential despite the absence of significant impacts on stock returns according to this study. Understanding external risks such as industrial conditions and macroeconomic factors is crucial for informed investment decisions. Moreover, the study suggests that the impact of GCG may unfold more significantly over the long term prompting investors to consider the enduring aspects of GCG implementation in their decision-making.

Continuous monitoring of company performance, dividend policies and changes in GCG practices is recommended due to the dynamic nature of markets and companies. Seeking advice from financial experts or investment consultants is encouraged to gain a broader perspective and navigate complex information for informed decision-making. Lastly, the study highlights avenues for further research including the exploration of additional variables like industry factors and economic conditions to comprehensively understand stock performance in SOE companies. Additionally, evaluating the enduring effects of GCG implementation in the context of state-owned enterprises presents an opportunity for more in-depth analysis. These conclusions underscore the importance of an informed and diversified approach for investors, considering both financial indicators and external factors that may impact SOE stock returns. The study encourages ongoing research to uncover additional factors influencing stock performance and assess the long-term effects of GCG implementation in state-owned enterprises.

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