

Determinants of Systematic Risk of State-Owned Enterprises in the Construction Sector Listed on the Indonesia Stock Exchange

Irni Yunita¹, Bayu Aji Prasetyo², Fajra Octrina³

^{1,2,3}Faculty of Economics & Business, Universitas Telkom, Indonesia

irniyunita@telkomuniversity.ac.id, worowirasm@gmail.com, muhazhari@telkomuniversity.ac.id

Abstract

The business activities run by the State-Owned Enterprises (BUMN) in Indonesia significantly affect the development of the business world and society. The construction sector industry is one of the SOEs that has an influence in the growth process in Indonesia. This research is a study of financial ratios consisting of liquidity ratios, activity ratios, solvency ratios and profitability ratios as factors that influence systematic risk in stocks. This study will determine which factors or variables from financial ratios have the most dominant influence on systematic risk. The sampling technique used is purposive sampling with the criteria (1) Construction Sector BUMN Companies listed on the Indonesia Stock Exchange which have Persero and Tbk status (2) Construction sector BUMN companies that have complete financial reports and have complete data needed in the study. during the period 2016 to 2019 on the Indonesia Stock Exchange. This study uses annual report data from sixty-two construction companies listed on the Indonesia Stock Exchange for the period 2016 to 2019. A total of sixty-two companies can be used as populations and four are used as research samples. The method used for this research is panel data. The results that are known from this study are Current Ratio (CR), Total Asset Turnover (TATO), Debt-to-equity Ratio (DER), Return on Equity (ROE) variables partially have no effect on the stock beta variable. The variables Current Ratio (CR), Total Asset Turnover (TATO), Debt-to-equity Ratio (DER), Return on Equity (ROE) simultaneously have no effect on the stock beta variable.

Keywords

stock beta; standard deviation; liquidity ratio; solvency ratio; profitability ratio



I. Introduction

The business activities run by State-Owned Enterprises (BUMN) in Indonesia significantly affect the development of the business world and the society. Most of them have monopolized several business fields that regulate the lives and needs of many people, and they are closely related to the fate of the Indonesian people. Therefore, BUMN is regulated and managed by the government in terms of regulating and running their business. These State-Owned Enterprises are expected to be able to meet the needs and desires of the business world in general and society in particular and must be able to maintain a good image in the eyes of the public.

Companies need financial supports to achieve their goals, one of which is through investment. Investment is important for society and companies. For companies, it can be used for additional capital; while for the community, it can be used as long-term savings. Economic and technological developments make it one of the sources of income and business for today's society. The types of products offered for investment are very diverse. The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020).

An index's value change is an important indicator for investors to determine whether they will sell, hold, or buy one or several stocks. Because stock prices move in seconds and minutes, the index value also moves up and down in a fast matter of time. The index's value change leads to the risks that will occur for the investment in the capital market.

Risk is the deviation between the expected return (ER) and the actual return (Hanafi, 2006). Companies, on the one hand, need to consider the risk so as not to interfere with the company's profit level. In this case, the company's ability to generate profit levels is related to the profits that will be obtained by investors. In general, an investor usually invests their funds in a company expecting a high rate of return.

The activity ratio is used to measure the effectiveness of the company in using its assets. It can also be used to measure the level of efficiency in the use of company resources (Kasmir). The activity ratio is also used to assess the company's ability to carry out daily activities. Every company certainly has a desire to achieve high profitability because high profitability indicates a company's success in obtaining profits based on its assets and based on its own capital.

This main purpose of this study is to determine the effect of the independent variable on the dependent variable, either partially or simultaneously in state-owned companies in the construction sector listed on the Indonesia Stock Exchange in 2016-2019. In addition, this study is expected to be useful to help people who will invest their money or who have become investors to calculate the extent to which risk has an effect.

II. Review of Literature

2.1 Systemic Risk

Systematic risk cannot be eliminated by diversifying since fluctuations in this risk are influenced by macro factors that can affect the market as a whole (Husnan, 2000). This risk is caused by factors that simultaneously affect stock prices in the capital market, such as changes in economic conditions, political climate, tax regulations, government policies, etc.

2.2 Theoretical Framework

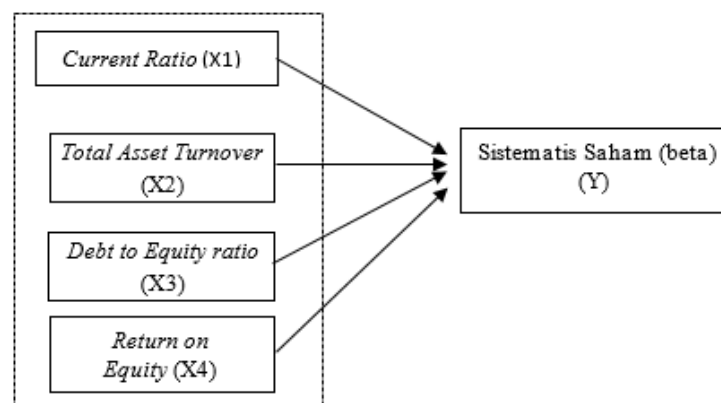


Figure 1. Theoretical Framework

2.3 Research Hypotheses

Figure 1 shows the study scheme retrieved from the hypothesis. The hypotheses in this study are based on previous research by Ajeng and Pasaribu (2013). From the theoretical framework described above, the hypotheses can be formulated as follows:

- H1: Liquidity Ratio (Current Ratio) negatively affects Systematic Risk (beta stock).
H2: Activity Ratio (Total Assets Turnover) negatively affects Systematic Risk (beta stock).
H3: Solvency Ratio (Debt-to-equity Ratio) negatively affects Systematic Risk (beta stock).
H4: Profitability Ratio (Return on Equity) negatively affects Systematic Risk (beta stock).
H5: There is a significant simultaneous effect between the Current Ratio, Total Assets Turnover, Debt-to-equity Ratio, and Return on Equity on Systematic Risk (beta stock) in the state-owned companies in the construction sector listed on the Indonesian Stock Exchange in the 2016-2019 period.

2.4 Population, Sample, and Data Collection Technique

The population in this study includes 62 state-owned companies in the construction sector listed on the Indonesia Stock Exchange from 2016 to 2019. Suharyadi and Purwanto (2016:13) state that sample is part of the population which becomes the focus of attention. This study uses total sampling technique with a purposive sampling technique. Purposive sampling is a sampling technique with certain considerations. From the 62 population, there are 4 samples obtained. The total samples in this study are four state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period, namely PT. Wijaya Karya (Persero) Tbk., PT. Waskita Karya (Persero) Tbk., PT. Adhi Karya (Persero) Tbk., Pembangunan Rumah (Persero) Tbk.

2.5 Data Collection Technique

This study uses library research data collection technique with secondary data sources. The secondary data sources in this study are quarterly reports of state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period. Previous research that supports this research can be in the form of journals, final project, theses, and articles.

2.6 Data Analysis Technique

The financial statement data obtained from the official websites of the four companies are used to calculate financial ratios with variables, current ratio (CR), total asset turnover (TATO), debt-to-equity ratio (DER), and return on equity (ROE). Afterwards, classical assumption test, descriptive statistical test, panel data regression analysis, coefficient of determination test, simultaneous significance test (F-test), and partial test (T-test) are performed and followed with hypothesis testing. Finally, conclusions are drawn from the result of data calculation and analysis.

III. Results and Discussion

3.1 Results

a. Descriptive Data

Table 1. Descriptive Statistics

	(CR)	(TATO)	(DER)	(ROE)	(BETA)
Median	1.401183	0.266269	2.583950	0.054816	1.945000
Minimum	1.002252	0.067329	1.000000	0.002086	-6.970000
Maximum	1.633573	0.572991	4.343000	0.184645	8.950000
Mean	1.356414	0.280208	2.708359	0.062434	1.947031
Standard Deviation	0.167345	0.148358	0.719255	0.044734	4.145624
Total Data	64	64	64	64	64

Source: Processed Data, 2021

b. Calculation of Beta Stock, Current Ratio, Total Asset Turnover, Debt-to-Equity Ratio, Return on Equity

1. Beta Stocks

Before calculating the beta stock, it is necessary to calculate the company's return, the market return, and the risk-free rate. The calculation of the stock return of PT. Wijaya Karya Tbk. in the first quarter of 2016 is formulated in equation (3).

$$R_{i,t} = (2412 - 2445) / 2445 = -0.011362134 = -1\%$$

Stock returns can be positive or negative. Positive return means getting a profit or getting Capital Gain, while negative return means losing or getting Capital Lost. The company's return in this study is calculated using the closing price of the current month's shares subtracted with the closing price of the previous month's shares and then divided with the closing price of the previous shares. The stock return of PT. Wijaya Karya Tbk in the first quarter of 2016 was negative, indicating that the investor of PT. Wijaya Karya Tbk. got Capital Lost in the first quarter. For the overall calculation of the company, see Appendix I.

In this study, the market used is LQ45. The market return for the first quarter was obtained by calculating the market return of LQ45 in December 2015 with LQ45 in March 2016 and so on. The following is the calculation of market return in the 2016 quarter:

$$R_{m,t} = (LQ45_{t-1} - LQ45_{t-2}) / LQ45_{t-2}$$

$$R_{m,t} = (792 - 840) / 840 = 0.061007721$$

The calculation shows the value of $R_{m,t}$ is 0.061007721 which is the market return of LQ45 in the 1st quarter of 2016. For the calculation of the entire sample, see Appendix I. The average return for the 2016-2019 period is 0.017010403 = 2%.

The risk-free rate used in this study refers to the BI-7Days per month during the 2016-2019 period and then on average. The calculation is as follows:

$$\text{Risk-free rate} = \text{BI7Days} / n$$

$$\begin{aligned} \text{Risk free rate} = & (7.50\% + 7.25\% + 7.00\% + 6.75\% + 5.50\% + 5.50\% + 5.25\% + 5.25\% + \\ & 5.25\% + \\ & 5.00\% + 4.75\% + 4.75\% + 4.75\% + 4.75\% + 4.75\% + 4.75\% + 4.75\% + 4.75\% + 4.50\% + \\ & 4.25\% + \\ & 4.25\% + 4.25\% + 4.25\% + 4.25\% + 4.25\% + 4.25\% + 4.25\% + 4.75\% + 4.25\% + 5.25\% + \\ & 5.50\% + \\ & 5.75\% + 5.75\% + 6.00\% + 6.00\% + 6.00\% + 6.00\% + 6.00\% + 6.00\% + 6.00\% + 6.00\% + \\ & 5.75\% + \\ & 5.50\% + 5.25\% + 5.00\% + 5.00\% + 5.00\%) / 49 \end{aligned}$$

$$\text{Risk free rate} = 5.24\%$$

The beta stocks are calculated as follows:

$$\text{Risk free rate} = 5.24\%$$

$$\text{companies return 1st TW 2016} = -0.011362134 = -1\%$$

$$\text{market return} = 0.017010403 \quad \text{Beta's Stock} = (r_i - r_f) / (r_m - r_f)$$

$$\text{Beta's Stock} = (-0.011362134 - 5.24\%) / (0.017010403 - 5.24\%)$$

$$\text{Beta's Stock} = 1.802$$

The results of these calculations show that β greater than 1 ($\beta > 1$) is called an aggressive stock, because the change in the return of stock is greater than what occurs in the market. It means that the stock has a return that does not fluctuate with changes in stock market returns. For the calculation of the whole sample, see Appendix I.

The results of the comparison of the TATO, ITO and RTO variables show that the TATO of the PT. Telekomunikasi Indonesia has a higher value when compared to the Nippon Telegraph Telecommunication. When viewed from the RTO variable, the Nippon Telegraph Telecommunication has a higher value than the PT. Telekomunikasi Indonesia.

2. Current Ratio

Current Ratio can be used to measure the company's ability to pay every short-term obligation by using the company's current assets (Sujarweni, [23]). If the ratio is above 1, in the liquidity ratio analysis, it means that the company is safe to pay its current liabilities using current assets. If the ratio is less than 1, it means that the company may have difficulty paying its debts to creditors on time. The following is a calculation of the current ratio of PT. Wijaya Karya Tbk. in the first quarter of 2016.

$$CR = \frac{\text{Current Asset}}{\text{Current Liabilities}}$$

$$CR = \frac{11906984686}{10193163761} = 1.15946$$

The results of calculation show that CR value is 1.15946, indicating $CR > 1$. Therefore, it means that PT. Wijaya Karya Tbk. is safe to pay its current liabilities using its current assets. For the calculation of the entire sample, see Appendix I.

3. Total Asset Turnover

Total Assets Turnover can be used to measure the effectiveness of the company's total assets in generating sales or measure how much sales will be generated from each rupiah embedded in total assets (Hery, [11]). The following is a calculation of the total asset turnover of PT. Wijaya Karya Tbk. in the first quarter of 2016.

$$TATO = \frac{\text{Net Sales}}{\text{Total Assets}}$$

$$TATO = \frac{2726647884}{19289424816} = 0.14135$$

The results of calculations show that TATO value is 0.14135, meaning that PT. Wijaya Karya Tbk. is only able to generate sales of 0.14135 times of the total assets owned. For the calculation of the entire sample, see Appendix I.

4. Debt-to-Equity Ratio

Hery ([11]) suggests that the higher the debt-to-equity ratio the smaller the amount of owner's capital that has been used as debt security. The following is the calculation of the debt-to-equity ratio of PT. Wijaya Karya Tbk. in the first quarter of 2016.

$$DER = \frac{\text{Total Debt}}{\text{Total Capital}}$$

$$DER = \frac{13757142628}{5532282188} = 2.48670$$

The results of calculation show that DER value is 2.48670, meaning that every rupiah of the equity of PT. Wijaya Karya Tbk. will guarantee Rp2,48,670 debts. The higher the DER value, the more the company uses debt compared to its capital. A healthy or safe DER ratio should be less than 1 (x) or $< 100\%$. For the calculation of the entire sample, see Appendix I.

5. Return on Equity

Hery states that return on equity (ROE) shows how much equity contributes to creating bearish profits. In other words, this ratio is used to measure how much net profit will be generated from each rupiah of funds embedded in total equity. The following is the calculation of the return on equity of PT. Wijaya Karya Tbk. in the first quarter of 2016.

$$ROE = \frac{\text{Net Profit}}{\text{Total Equity}} \times 100\%$$

$$ROE = \frac{94180823}{5532282188} \times 100\% = 0.01703$$

The results of calculation show that ROE value is 0.01703. This can be interpreted that every rupiah of shareholder equity, PT. Wijaya Karya Tbk can process it into Rp0.01703 for company profit. For the calculation of the entire sample, see Appendix I.

c. Classical Assumption Test

1. Normality Test

In this study, the residual normality test used the Jarque-Bera test (J-B) while the probability level used was 0.05. The basis for decision making can be seen from the J-B statistics with the following conditions:

If the probability value ≥ 0.05 , then the assumption of normality is met.

If the probability value < 0.05 , then the assumption of normality is not met.

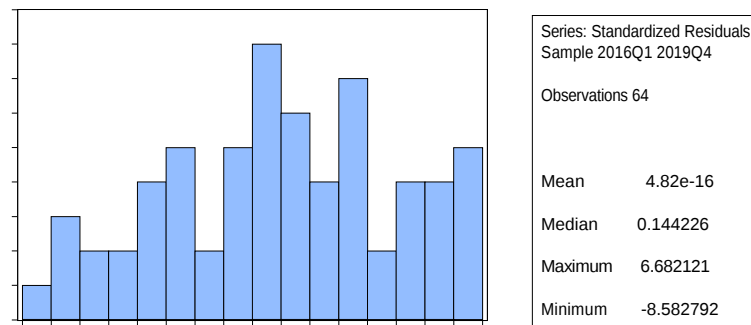


Figure 2. Normality Test with Jarque-Bera Test
Source: Processed Data, 2021

Figure 2 shows that the probability value of the J-B statistic is $0.361852 > 0.05$, so it can be assumed that normality is met.

2. Multicollinearity Test

In this study, the symptoms of multicollinearity can be seen from the correlation value between the variables contained in the correlation matrix. If there is a fairly high correlation between independent variables, which is above 0.8, then this is an indication of multicollinearity as presented in table 2 below:

	CR	TATO	DER	ROE
CR	1.000000	0.009972	-0.451229	-0.256126
TATO	0.009972	1.000000	-0.062180	0.708672
DER	-0.451229	-0.062180	1.000000	0.106347
ROE	-0.256126	0.708672	0.106347	1.000000

Figure 3. Multicollinearity Test with Correlation Matrix
Source: Processed data, 2021

Table 4.8 shows that there are no symptoms of multicollinearity between the independent variables. This is because the correlation value between independent variables is more than 0.8.

3. Heteroscedasticity Test

Heteroscedasticity test aims to detect the presence or absence of heteroscedasticity by using the Glejser test. The following are the results of the Glejser test:

Dependent Variable: RESABS Method: Panel Least Squares Date: 08/20/21 Time: 15:37 Sample: 2016Q1 2019Q4 Periods included: 16 Cross-sections included: 4 Total panel (balanced) observations: 64				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.865309	3.577403	-1.080479	0.2843
CR	4.717697	2.064975	2.284628	0.0659
TATO	-0.806407	2.920873	-0.276103	0.7834
DER	0.255687	0.457155	0.559301	0.5781
ROE	4.925439	9.998616	0.492563	0.6241
R-squared	0.085562	Mean dependent var		3.307886
Adjusted R-squared	0.023567	S.D. dependent var		2.348564
S.E. of regression	2.320725	Akaike info criterion		4.596541
Sum squared resid	317.7601	Schwarz criterion		4.765204
Log likelihood	-142.0893	Hannan-Quinn criter.		4.682986
F-statistic	1.380131	Durbin-Watson stat		2.112348
Prob(F-statistic)	0.251822			

Figure 4. Heteroscedasticity test (Glejser test)

Source: Processed data, 2021

Table 3 shows that all prob > 0.05, which means that there is no heteroscedasticity problem.

d. Estimation Test of Model Selection of Data Panel Regression

Data panel regression can be done with three models, namely common effect, fixed effect, and random effect. The selection of the regression model depends on the assumptions used by the researcher and the fulfillment of statistical data processing requirements.

1. Common Effect Model

Dependent Variable: BETA_SAHAM Method: Panel Least Squares Date: 08/20/21 Time: 15:33 Sample: 2016Q1 2019Q4 Periods included: 16 Cross-sections included: 4 Total panel (balanced) observations: 64				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.549789	6.496131	-0.084633	0.9328
CR	0.324356	3.749745	0.086501	0.9314
TATO	2.381508	5.303589	0.449037	0.6551
DER	0.293767	0.830138	0.353877	0.7247
ROE	9.512734	18.15809	0.523884	0.6023
R-squared	0.032273	Mean dependent var		1.947031
Adjusted R-squared	-0.033336	S.D. dependent var		4.145624
S.E. of regression	4.214156	Akaike info criterion		5.789680
Sum squared resid	1047.787	Schwarz criterion		5.958343
Log likelihood	-180.2698	Hannan-Quinn criter.		5.856125
F-statistic	0.491901	Durbin-Watson stat		1.802600
Prob(F-statistic)	0.741654			

Figure 5. Results of Common Effect Regression Model

Source: Processed data, 2021

2. Fixed Effect Model

Dependent Variable: BETA_SAHAM
Method: Panel Least Squares
Date: 08/20/21 Time: 15:33
Sample: 2016Q1 2019Q4
Periods included: 16
Cross-sections included: 4
Total panel (balanced) observations: 64

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.533262	8.910067	-0.396547	0.6932
CR	0.827690	5.341212	0.154963	0.8774
TATO	5.775020	6.894693	0.837604	0.4058
DER	1.121465	1.179498	0.950799	0.3458
ROE	-4.771978	23.84818	-0.200098	0.8421

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.059129	Mean dependent var	1.947031
Adjusted R-squared	-0.058480	S.D. dependent var	4.145624
S.E. of regression	4.265120	Akaike info criterion	5.855286
Sum squared resid	1018.710	Schwarz criterion	6.125147
Log likelihood	-179.3692	Hannan-Quinn criter.	5.961598
F-statistic	0.502756	Durbin-Watson stat	1.834581
Prob(F-statistic)	0.828533		

Figure 6. Results of Fixed Effect Regression Model
Source: Processed data, 2021

Once the results of the common effects and fixed effects models are obtained, the next step is the Chow test.

3. Chow Test

The Chow test has a provision if the probability is > 0.05 , it means that the regression model used is the common effect approach. Meanwhile, if the probability is < 0.05 , it means that the valid regression model used is the fixed effect model.

Date: 08/20/21 Time: 15:33
Sample: 2016Q1 2019Q4
Periods included: 16
Cross-sections included: 4
Total panel (balanced) observations: 64

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.549789	6.496131	-0.084633	0.9328
CR	0.324356	3.749745	0.086501	0.9314
TATO	2.381508	5.303589	0.449037	0.6551
DER	0.293767	0.830138	0.353877	0.7247
ROE	9.512734	18.15809	0.523884	0.6023

R-squared	0.032273	Mean dependent var	1.947031
Adjusted R-squared	-0.033336	S.D. dependent var	4.145624
S.E. of regression	4.214156	Akaike info criterion	5.789680
Sum squared resid	1047.787	Schwarz criterion	5.958343
Log likelihood	-180.2698	Hannan-Quinn criter.	5.856125
F-statistic	0.491901	Durbin-Watson stat	1.802600
Prob(F-statistic)	0.741654		

Figure 7. Results of Chow Test
Source: Processed data, 2021

The results of the Chow test in Table 6 show that the probability value of the cross section is $0.6617 > 0.05$, so a valid model is chosen, i.e., the common effect model.

4. Analysis of Data Panel Regression

In this study, the analytical technique used is multiple regression using data panel to describe the effect of the current ratio, total asset turnover, debt-to-equity ratio, and return on equity on stock systematic risk (beta).

In the selection of the estimation method in the previous section, it can be seen that the best estimation method used in this study is the common effect model (CEM). The results of data panel regression analysis using the common effect model can be seen in Table 6:

Dependent Variable: BETA_SAHAM
Method: Panel Least Squares
Date: 08/20/21 Time: 15:33
Sample: 2016Q1 2019Q4
Periods included: 16
Cross-sections included: 4
Total panel (balanced) observations: 64

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.549789	6.496131	-0.084633	0.9328
CR	0.324356	3.749745	0.086501	0.9314
TATO	2.381508	5.303589	0.449037	0.6551
DER	0.293767	0.830138	0.353877	0.7247
ROE	9.512734	18.15809	0.523884	0.6023

Figure 8. Results of Linear Regression Analysis using Data Panel

Source: Processed data, 2021

Table 7 shows that the equation of linear regression is:

$$Y = -0.549789 + 0.324356CR + 2.381508TATO + 0.293767DER + 9.512734ROE + e$$

From the equation, it can be seen that:

- 1) The constant (c) = -0.549789 indicates a constant value, where if the value of all independent variables is equal to zero, then the beta stock variable (Y) is equal to -0.353049. A negative sign on the constant indicates that the dependent variable is quite far apart between the dependent and independent variables.
- 2) The coefficient of the current ratio (CR) (X1) = 0.324356, meaning that if the other variables have a fixed value and the current ratio (CR) increases in the ratio, the beta stock will increase by 0.324356 (32.43%). The value of unstandardized coefficients B is negative, indicating that there is a positive relationship between the current ratio (CR) and stock systematics (beta). Therefore, if the current ratio increases, the beta stock will increase.
- 3) The coefficient of total asset turn over (TATO) (X2) = 2.381508, meaning if the other variables have a fixed value and the total asset turn over (TOTA) ratio increases, the beta stock will increase by 2.381508 (238.81%). The unstandardized coefficients B value is positive, indicating that there is a positive relationship between total asset turnover (TATO) and stock systematics (beta). Therefore, if the current ratio increases, the beta stock will increase.
- 4) The coefficient of total asset turnover (DER) (X3) = 0.293767, meaning if the other variables are fixed and the debt-to-equity ratio (DER) increases, the beta stock will increase by 0.293767 (29.37%). The value of unstandardized coefficients B is positive, indicating that there is a positive relationship between debt-to-equity ratio (DER) and stock systematics (beta). Therefore, if the debt-to-equity ratio (DER) increases, the beta stock will increase.
- 5) The coefficient of return on equity (ROE) (X4) = 9.512734, meaning that if the other variables have a fixed value and the return on equity (ROE) (X4) increases in the ratio, the stock beta will increase by 9.512734 (951.27%). The value of unstandardized coefficients B is positive, indicating that there is a positive relationship between return on equity (ROE) and stock systematics (beta). Therefore, if the return on equity (ROE) increases, then profitability will increase.

5. Hypothesis Test

a) t-test (partial)

t-test aims to show how far the influence of one independent variable individually in explaining the dependent variable. The following are the criteria for decision making in this study:

1. If the probability value (T statistic) > 0.05 , then an independent variable individually affects the dependent variable.
2. If the probability value (T statistic) < 0.05 , then an independent variable individually affects the dependent variable.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.549789	6.496131	-0.084633	0.9328
CR	0.324356	3.749745	0.086501	0.9314
TATO	2.381508	5.303589	0.449037	0.6551
DER	0.293767	0.830138	0.353877	0.7247
ROE	9.512734	18.15809	0.523884	0.6023

Figure 9. Result of t-test (Partial)

Source: Processed data, 2021

Based on the number T table with the provisions of $= 0.05$, it can be seen the influences of each variable are as follows:

- 1) Current Ratio (CR) (X1) has a probability value of $0.9314 > 0.05$, so it can be said that the Current Ratio (CR) (X1) variable has no effect on the beta stock variable.
- 2) Total Assets Turnover (TATO) (X2) has a probability value of $0.6551 > 0.05$, so it can be said that the Total Assets Turnover (TOTA) (X2) variable has no effect on the beta stock variable.
- 3) Debt-to-Equity Ratio (DER) (X3) has a probability value of $0.7247 > 0.05$, so it can be said that the Debt-to-Equity Ratio (DER) (X3) variable has no effect on the beta stock variable.
- 4) Return on Equity (ROE) (X4) has a probability value of $0.6023 > 0.05$, so it can be said that the Return on Equity (ROE) (X4) variable has no effect on the beta stock variable.

b) F-test (Simultaneous)

F test aims to determine the effect of all independent variables simultaneously on the dependent variable. The following are the criteria for decision making in this study:

- 1) If the probability value of $F_{count} < \alpha$, it can be said that the estimated regression model is feasible or can be said to be influential.
- 2) If the probability value $> \alpha$, it can be said that the estimated regression model is not feasible or can be said to have no effect.

R-squared	0.032273	Mean dependent var	1.947031
Adjusted R-squared	-0.033336	S.D. dependent var	4.145624
S.E. of regression	4.214156	Akaike info criterion	5.789680
Sum squared resid	1047.787	Schwarz criterion	5.958343
Log likelihood	-180.2698	Hannan-Quinn criter.	5.856125
F-statistic	0.491901	Durbin-Watson stat	1.802600
Prob(F-statistic)	0.741654		

Figure 10. Results of F-Test

Source: Processed data, 2021

With the provision that $\alpha = 0.05$, the results of data processing show that (CR, TATO, DER, ROE) the significance of calculated F is 0.491901 with a greater significance (0.741654) than 0.05. Thus, the results of the analysis in this study indicate that the independent variables (CR, TATO, DER, ROE) have no effect on the beta stock variable.

3.2 Discussion

a. Partial Effect of Current Ratio (CR) on Beta Stock

The coefficient of the current ratio (CR) (X_1) = 0.324356, meaning if the other variables have a fixed value and the current ratio (CR) increases in the ratio, the beta stock will increase by 0.324356 (32.43%). The value of unstandardized coefficients B is negative, indicating that there is a positive relationship between the current ratio (CR) and stock systematics (beta). Therefore, if the current ratio increases, the beta stock will increase. Current Ratio (CR) (X_1) has a probability value of $0.9314 > 0.05$, so it can be said that the Current Ratio (CR) (X_1) variable has no effect on the beta stock variable. This is in accordance with research by Ajeng and Pasaribu (2013) stating that the Current Ratio (CR) variable has no effect on the beta stock variable.

Data analysis and hypothesis testing show that the current ratio (CR) has no effect on beta stock. Current ratio (CR) with a positive coefficient value indicates a positive direction or a unidirectional relationship with the current ratio variable. This means that the current ratio has no or no significant effect on the beta stock.

Therefore, it can be interpreted that the influence given by the current ratio variable or the company's ability to pay its short-term debt on the stock beta is not significant. This condition implies that a low CR is usually considered to indicate a problem in liquidity and is an early indicator of the company's inability to meet its short-term obligations. A high CR, meaning high liquidity, also indicates that the company is less able to manage money to create money, which in turn can reduce the company's ability to generate profits.

Investors often judge that the greater the CR, the greater the company's ability to meet its operational needs, especially working capital. It is very important to maintain the company's performance, which in turn affects the performance of stock prices. This can provide confidence to investors to own the company's shares so as to increase stock returns.

b. Partial Effect of Total Asset Turnover (TATO) on Beta Stock

The coefficient of total asset turn over (TATO) (X_2) = 2.381508, meaning that if the other variables have a fixed value and the total asset turn over (TOTA) ratio increases, the beta stock will increase by 2.381508 (238.81%). The unstandardized coefficients B value is positive, indicating that there is a positive relationship between total asset turnover (TATO) and stock systematics (beta). Therefore, if the current ratio increases, the beta of the stock will increase. Total Assets Turnover (TATO) (X_2) has a probability value of $0.6551 > 0.05$, so it can be said that the Total Assets Turnover (TATO) (X_2) variable has no effect on the stock beta variable.

Data analysis and hypothesis testing show that total asset turnover (TATO) has no effect on stock beta. Total asset turnover (TATO) which has a positive coefficient value. This indicates a positive direction or a unidirectional relationship with the total asset turnover variable. It means that total asset turnover has no or no significant effect on stock beta.

Therefore, it can be interpreted that the total asset turnover (TATO) does not have an effect on the beta of the stock. This is because of an increase in assets generated by debt, so the company is obliged to meet interest payments. This interest expense has an impact on

the beta of the shares produced by the company, and it becomes less. This is in accordance with research by Ajeng and Pasaribu (2013) stating that the Total Asset Turnover (TATO) variable has no effect on the stock beta variable.

c. Partial Effect of *Debt-to-Equity Ratio (DER)* on Beta Stock

The coefficient of total asset turnover (DER) (X3) = 0.293767, meaning that if the other variables are fixed and the debt-to-equity ratio (DER) increases, the beta stock will increase by 0.293767 (29.37%). The value of unstandardized coefficients B is positive, indicating that there is a positive relationship between debt-to-equity ratio (DER) and stock systematics (beta). Therefore, if the debt-to-equity ratio (DER) increases, the beta stock will increase. Debt-to-equity Ratio (DER) (X3) has a probability value of $0.7247 > 0.05$, so it can be said that the Debt-to-Equity Ratio (DER) (X3) variable has no effect on the stock beta variable.

Data analysis and hypothesis testing show that the debt-to-equity ratio (DER) has no effect on stock beta. Debt-to-equity ratio (DER) with a positive coefficient value indicates a positive direction or a unidirectional relationship with the debt-to-equity ratio (DER) variable. It means that the debt-to-equity ratio has no or no significant effect on the beta of the stock.

Therefore, it can be interpreted that the influence of the debt-to-equity ratio variable on the stock beta is not significant. This condition implies that the higher the debt-to-equity ratio, the smaller the company's dependence on outsiders; so that the company's risk level is getting smaller.

By some investors, DER is considered as the magnitude of the company's responsibility to third parties, namely investors who provide loans to the company. DER that is too high has a bad impact on the company's performance. This is because a higher level of debt means that the company's fixed expenses will be even greater and will reduce profits. With a high level of debt charged to shareholders, it will increase investment risk to shareholders. This is in accordance with research by Ajeng and Pasaribu (2013) stating that the Debt-to-equity ratio (DER) variable has no effect on the beta stock variable.

d. Partial Effect of *Return on Equity (ROE)* on Beta Stock

The coefficient of return on equity (ROE) (X4) = 9.512734, meaning that if the other variables have a fixed value and the return on equity (ROE) (X4) increases in the ratio, the beta stock will increase by 9.512734 (951.27%). The value of unstandardized coefficients B is positive, indicating that there is a positive relationship between return on equity (ROE) and stock systematics (beta). Therefore, if the return on equity (ROE) increases, then profitability will increase. Return on Equity (ROE) (X4) has a probability value of $0.6023 > 0.05$, so it can be said that the Return on Equity (ROE) (X4) variable has no effect on the stock beta variable.

Data analysis and hypothesis testing show that return on equity (ROE) has no effect on stock beta. Return on equity (ROE) with a positive coefficient value indicates a positive direction or a unidirectional relationship with the return on equity variable. Therefore, it means that the return on equity has no effect or is not significant on the beta stock.

Therefore, it can be interpreted that the return on equity variable has no significant effect on stock beta indicating that the company cannot guarantee its equity with profit. To increase ROE, the companies must increase capital and increase the use of capital to increase the company's share price. This is in accordance with research by Ajeng and Pasaribu (2013) stating that the Return on equity (ROE) variable has no effect on the stock beta variable.

e. Simultaneous Effects of Current Ratio (CR), Total Asset Turnover (TATO), Debt-to-equity Ratio (DER), Return on Equity (ROE) on Beta Stock

Based on Table 4.9 with the provisions of $\alpha = 0.05$, the results of data processing show that the current ratio (CR), total asset turnover (TATO), debt-to-equity ratio (DER), and return on equity (ROE) have a significance F count of 0.491901 with a significant significance greater than ($0.491901 > 0.05$). Therefore, the results of the analysis in this study indicate that the independent variables including current ratio (CR), total asset turnover (TATO), debt-to-equity ratio (DER), and return on equity (ROE) simultaneously have no effect on the beta stock variable. This is in accordance with research by Ajeng and Pasaribu (2013) stating that the current ratio (CR), total asset turnover (TATO), debt-to-equity ratio (DER), and return on equity (ROE) simultaneously have no effect on the stock beta variable.

IV. Conclusion

1. The results of the data processing and analysis show that the development of profitability, liquidity, solvency, and activities of state-owned companies in the construction sector listed on the Indonesian Stock Exchange in the 2016-2019 period are explained as follows:
 - a. From the calculation of the average profitability ratio using the current ratio, the state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period are safe to pay their current liabilities using their current assets. In other words, these four companies are able to pay off their obligations that are due immediately and within a short period of time from 2016 to 2019.
 - b. From the calculation of the average liquidity ratio using total asset turnover, the state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period generate sales that increase every year.
 - c. From the calculation of the average solvency ratio using the debt-to-equity ratio, the state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period show that each year the company uses debt more than its capital.
 - d. From the calculation of the average activity ratio using return on equity, the state-owned companies in the construction sector listed on the Indonesia Stock Exchange in the 2016-2019 period show that the rate of return (income) obtained by the company on capital is increasing every year.
2. Current Ratio (CR) (X1) has no effect on the beta stock variable.
3. Total Assets Turnover (TATO) (X2) has no effect on the beta stock variable.
4. Debt-to-equity Ratio (DER) (X3) has no effect on the beta stock variable.
5. Debt-to-equity Ratio (DER) (X3) has no effect on the beta stock variable.
6. Return on Equity (ROE) (X4) has no effect on the stock beta variable.
7. The independent variables current ratio (CR), total asset turnover (TATO), debt-to-equity ratio (DER), and return on equity (ROE) simultaneously have no effect on the stock beta variable.

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