JAMBU AIR: Journal of Accounting Management Business and International Research
E-ISSN: 2964-0954 P-ISSN: 2964-8033
Vol. 2 No. 1 April 2023

Effect of Debt to Equity Ratio and Efficiency on Return on Equity in Defense Sector Companies

Akhmad Firmansyah Buhroni[1] Ivan Yulivan[2] Lukman Yudho Prakoso[3]
Defense Economics Study Program, Faculty of Defense Management, Universitas Pertahanan Republik Indonesia, Bogor Regency, West Java Province, Indonesia[1,2,3]
Email: akhmadfirmansyah22@gmail.com[1] ivanyulivan42@gmail.com[2]
lukman.prakoso@idu.ac.id[3]

Abstract
Indonesia is a country that has so many islands, that's why Indonesia is often called a maritime country. In the Law of the Republic of Indonesia No. 16 of 2012 concerning the Defense Industry it is given to companies in the defense industry immediately, but rather a set of regulations, terms and conditions that must first be fulfilled by companies in the Defense Industry. The success of a company can be seen from the level of ROE or (Return On Equity). However, the Defense Sector Company's net profit from 2011-2020 is still relatively small. This study uses a quantitative approach. The samples used in this study were 3 companies including PT Dirgantara Indonesia, PT PAL Indonesia and PT Pindad with a period of 10 years. The results of this study indicate that DER has a negative effect on ROE, efficiency has a positive effect on ROE, and the magnitude of the influence of Debt To Equity Ratio (DER) and Efficiency on Return On Equity in defense sector companies is 66.3% and the remaining 33.7% is explained by the variable others that were not examined in this study.
Keywords: Debt to Equity Ratio, Efficiency, Return on Equity, Defense Sector Companies

INTRODUCTION

The defense industry is one of the important factors in supporting a country's defense power. Countries that have an advanced defense industry will have more capabilities in their defense forces. The defense strength of a country will be better if it is supported by the country's ability to produce various kinds of defense supporting facilities and infrastructure through its defense industry.

A strong defense industry has two main effects, namely a direct effect on the development of defense capabilities, and an effect on national economic and technological development. In the field of defense capability development, a strong defense industry guarantees a sustainable supply of defense equipment and defense facilities. The availability of the main weaponry system is the main thing in preparing plans for building defense capabilities in the long term, without worrying about political and economic factors, such as embargoes. The defense industry can have an effect on national economic and industrial growth, namely participating in developing national industrial growth on an international scale, employment, technology transfer, and national development in the field of science and technology.

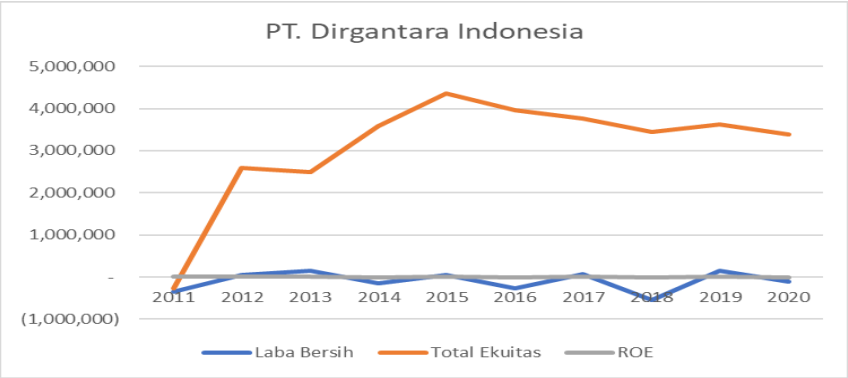
The direct effect of the existence of the defense industry, both on the development of defense capabilities and on national economic and technological development, can only be felt optimally if the defense industry is in a healthy and competitive condition. However, in its operational activities companies in the defense industry sector often face problems both internally and externally which then result in a company's financial performance being disrupted, or in other words these problems ultimately affect the health of the company.

There are five measures that can be used to assess company performance, namely: capital structure, liquidity, efficiency, profitability, and the company's fair market value (Keown and

Martin, 2018). To advance the domestic defense industry, it is necessary to review the financial aspect where the company's performance can be described from its financial reports, this is necessary to measure the success of a company's performance in managing and maximizing its financial performance (Nugraha et al., 2020). Ratio is the most frequently used financial statement analysis technique and is an instrument that can provide a way out and describe the symptoms of a situation. Financial ratios are an indicator that is used as a media for more in-depth analysis of the causes of a problem (Sukma & Ruhenda, 2022)

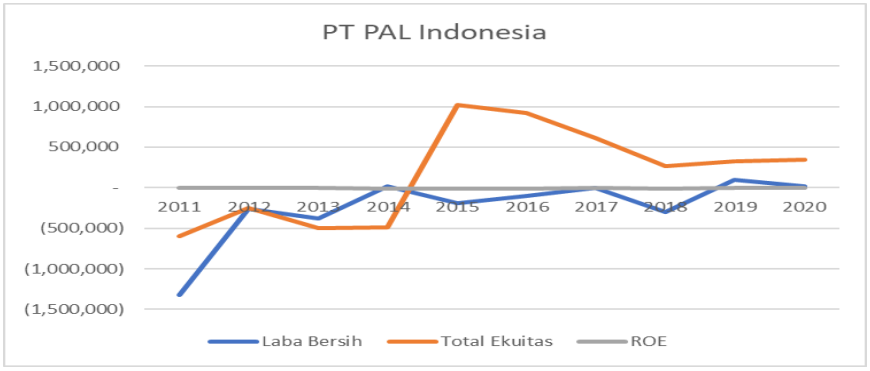
One way of assessing a company's financial performance is through measuring its profitability, profitability itself can be proxied by Return on Equity (ROE). ROE is a ratio that measures the effectiveness or ability of a company in managing its capital from investors in obtaining net profit. The higher the profit generated by the company, the better the company's performance. Of course investors will be interested in the ROE generated by the company. In addition, a high value on ROE indicates that the rate of return that investors will receive will also be high. This of course will attract investors to buy shares, this high level of demand will then increase share prices (Lukmana, 2018).

This research will focus on three companies engaged in the defense sector, namely PT Dirgantara Indonesia (Persero), PT PAL Indonesia (Persero), and PT Pindad (Persero). To provide a glimpse of the company's financial performance from year to year, the following is a graph showing the net income, total equity, and ROE of the three companies.



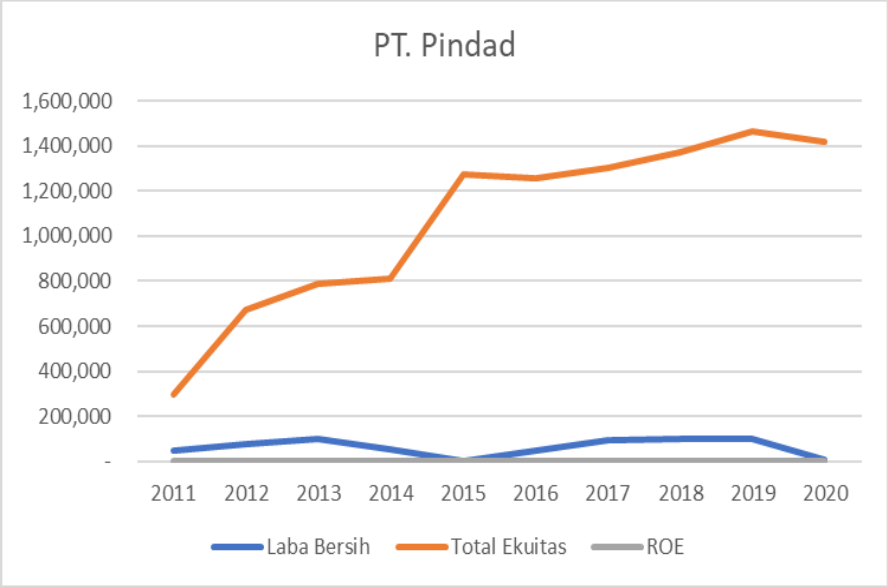
Graph 1. Net Profit, Total Equity, and ROE of PT Dirgantara Indonesia (Persero)
Source: Financial Report 2011-2020, Processed

From the graph above, we can see that PT Dirgantara Indonesia recorded a significant increase in total equity in 2015. However, in subsequent years it tended to decline. Meanwhile, net profit has increased and decreased which is not too significant every year. ROE tends to be stagnant with a relatively small value.



Graph 2. Net Profit, Total Equity, and ROE of PT PAL Indonesia (Persero)
Source: Financial Report 2011-2020, Processed

We can see from the graph above that PT PAL Indonesia recorded a significant increase in total equity in 2015. After that it experienced a decline in the following years. Meanwhile, net profit has increased quite significantly from year to year, although it is still fluctuating or relatively unstable. ROE tends to be stagnant with a relatively small value.



Graph 3. Net Profit, Total Equity, and ROE of PT Pindad (Persero)
Source: Financial Report 2011-2020, Processed

We can see from the graph above that PT Pindad (Persero) has recorded a significant increase in total equity from year to year. Meanwhile, the net profit did not experience a significant increase or decrease, but the profit was always positive compared to PT. Indonesian Aerospace and PT. PAL Indonesia. ROE tends to be stagnant with a relatively small value.

ROE of a company can be influenced by several factors, including the Debt to Equity Ratio and efficiency. Debt to Equity Ratio (DER) is a ratio that compares the amount of debt to equity. This ratio is often used by analysts and investors to see how much a company's debt is compared to the equity owned by the company or its shareholders. The higher the DER number, it is assumed that the company has a higher risk of its company's liquidity (Ginting, 2017).

Another factor that can affect ROE is Efficiency. According to Rivai in Andika (2017) Efficiency is the ratio used to ensure the efficiency and quality of the company's income correctly and accurately. In the context of the defense industry, so that defense sector companies can compete and continue to grow, the defense industry must have a competitive advantage. This will encourage the defense industry to continue to innovate and improve itself in order to provide high quality products and services at competitive prices. The defense industry must also realize that if efforts to increase efficiency in company operations are not enough, they are required to be able to create a more effective supply chain.

Based on the description above, the researcher is interested in researching the Effect of Debt to Equity Ratio and Efficiency on Return On Equity in Defense Sector Companies, with problems divided into: Does the Debt To Equity Ratio and Efficiency affect Return On Equity simultaneously or together? Does the Debt To Equity Ratio affect Return On Equity? Does Efficiency Affect Return On Equity? The aims of this research are: To find out and analyze the effect of Debt To Equity Ratio and Efficiency simultaneously or together on Return On Equity. To find out and analyze the effect of Debt To Equity Ratio on Return On Equity. To find out and analyze the influence of Efficiency on Return On Equity.

RESEARCH METHODS

This study uses a quantitative approach. Quantitative research is carried out using a structured, formal and specific design and has a detailed operational design (Nurlan, 2019). The type of data used in this research is cross section and time series data. Cross section data is data collected at one time for many individuals, while time series data is data collected from time to time for an individual (Gujarati, 2003). The samples used in this study were three companies engaged in the defense sector, namely PT Dirgantara Indonesia (Persero), PT PAL Indonesia (Persero) and PT Pindad (Persero) with a period of 10 years (2011-2020).

The dependent variable in this study is financial performance (Y), which is represented by a measure of profitability. The measure used is Return on Equity (ROE) which is measured by the comparison between net income and total equity. The independent variable in this study is the Debt to Equity Ratio (X1), which is measured by comparing the total debt to the total equity of the company. Where the smaller this ratio, the better. The next independent variable is efficiency (X2), which is measured by comparing total operating costs to total sales. Where the smaller this ratio, the better.

The data analysis method in this study is multiple linear regression, which is a regression model that involves more than one independent variable. Multiple linear regression analysis was carried out to find out the direction and how much influence the independent variables have on the dependent variable (Ghozali, 2018). The multiple linear regression analysis model used to test the hypothesis is as follows: $Y = b0 + \beta1X1 + \beta2X2 + \varepsilon t$

RESEARCH RESULTS AND DISCUSSION

Classical Assumption Testing

The results of this study stated that they had passed the Classical Assumption Test. The classical assumption test consists of a normality test, heteroscedasticity test, autocorrelation test and multicollinearity test.

Normality test

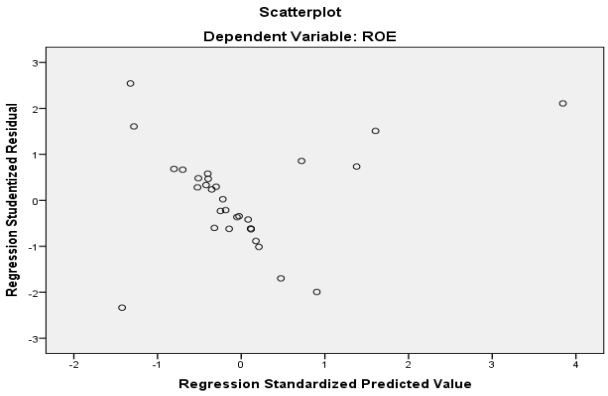
Table 1. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.31580310
Most Extreme Differences	Absolute	.103
	Positive	.103
	Negative	-.095
Test Statistic		.103
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

A variable is said to be normally distributed if its significance value is greater than or equal to 0.05. The table above shows that the sig is 0.2 which means sig > 0.05, which means the data is normally distributed.

Heteroscedasticity Test

Table 2. Heteroscedasticity Test



It is said to be heteroscedasticity free if there are no dots that form a certain regular pattern, and the dots on the scatterplot above spread randomly above or below the number 0 on the y axis. This means that there is no heteroscedasticity problem.

Autocorrelation Test

Table 3. Autocorrelation Test

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.829[a]	.687	.663	.32729	1.925
a. Predictors: (Constant), EFISIENSI, DER					
b. Dependent Variable: ROE The data requirements to pass the Autocorrelation Test are du < d < 4 – du. Judging from the Durbin-Watson table, du = 1.6498. So it can be stated that this model passes the autocorrelation test.					

Multicollinearity Test

Table 4. Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	DER	.902	1.109
	EFISIENSI	.902	1.109
a. Dependent Variable: ROE			

If the VIF value is < 10 or the Tolerance value is > 0.01, it means that multicollinearity does not occur. If the VIF value is > 10 or the Tolerance value is <0.01, multicollinearity is stated. The test results show a VIF value of 1.109 <10 and a tolerance of 0.902 > 0.01, which means that there is no multicollinearity.

Hypothesis Test

According to Sugiyono (2018: 98) the hypothesis is a temporary answer to the research answer formulation, where the research problem formulation has been stated in the form of a question sentence. The main function of the hypothesis is to open up the possibility to test the truth of the theory.

Table 5. Multiple Linear Regression

Coefficients[a]			
Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-1.744	.420
	DER	-.033	.008
	EFISIENSI	2.027	.418
a. Dependent Variable: ROE			

Y = α+β1X1+ β2X2+ β3X3 Y = -1,744 - 0,033 X1 + 2,027 X2

Determination Coefficient Test (R2)

Table 6. Determination Coefficient Test (R2)

Model Summary			
Model	R	R Square	Adjusted R Square
1	.829a	.687	.663
a. Predictors: (Constant), EFISIENSI, DER			
b. Dependent Variable: ROE			

The amount of determination (Adjusted R2) is 0.663, which means that 66.3% of the dependent variable, namely ROE (Y), can be explained or influenced by the independent variables DER and efficiency. While the remaining 33.7% is explained by other variables not examined in this study.

Statistical Test F (Test F)

Table 7. Statistical Test F (Test F)

ANOVA[a]			
Model		F	Sig.
1	Regression	29.591	.000[b]
	Residual		
	Total		
a. Dependent Variable: ROE			
b. Predictors: (Constant), EFISIENSI, DER			

If seen from Fcount of 29.591 and Ftable 2.92. Then Fcount > Ftable and significant value <0.05. So it can be concluded that all independent variables influence simultaneously (together) on the dependent variable.

Statistical Test T (T Test)

Table 8. Statistical Test T (T Test)

Coefficients[a]			
Model		t	Sig.
1	(Constant)	-4.153	.000
	DER	-4.150	.000
	EFISIENSI	4.853	.000
a. Dependent Variable: ROE			

To see whether or not the t test has an effect, the requirements are a significant value <0.05 and tcount > ttable. Tcount DER 4.150 > ttable 1.69726 and a significant value <0.05, it can be interpreted that DER partially has a negative effect on ROE. While efficiency tcount 4.853 > ttable 1.69726 and a significant value <0.05 so it can be interpreted that efficiency partially has a positive effect on ROE.

Discussion

Based on the first hypothesis testing, it is known that DER has a negative effect on ROE. The test results show that the smaller the DER ratio, the better the ROE of defense sector companies. This is possible because the capital owned by defense sector companies is invested in productive assets that increase production quantity and are able to reduce production costs. In addition, improving the company's capital structure will increase creditor support for working capital needs for the company's business operations, including strengthening the company's bargaining position in determining agreements related to loan schemes and conditions from creditors. In general, it can be interpreted that defense sector companies have managed their capital structure, including maintaining a good ratio of liabilities and capital, so as to increase the company's ROE.

The results of testing the second hypothesis show that efficiency has a positive effect on ROE. This can be interpreted that even though the company is able to increase its ROE, this increase is accompanied by an increase in production costs. Or in other words, the company has not been able to fully reduce production costs to an efficient level and achieve ROE at an optimal level. This condition can be caused by various things, both internal and external sources of the company. Internal factors, for example, the application of policies related to the balance of the capital structure is not optimal, the accumulation of materials in warehouses for a relatively long time will increase storage costs and lead to increased production costs, and the lack of the role of the company's Internal Supervisory Unit in assisting management to encourage production cost efficiency, and etc. While external factors included the influence of global economic turmoil on financial market volatility and stock prices, so that the price of raw materials for production needs, which were still largely dependent on imports, also came under pressure; depreciation of the Rupiah exchange rate against the US Dollar; government policies related to taxes, export/import regulations, absorption of domestic defense products, and others.

In practice, it is still possible for a company with a low level of efficiency to still book profits. This is because the main factor that determines a company's profit/loss is the level of sales, then effectiveness and efficiency as well as several other supporting factors (Cahyo Putro, S., Suwarno, P., and Asmoro, N., 2022). This opinion explains that an increase in sales is the main factor in determining the company's net profit, after these factors are met, then other factors will support.

CONCLUSION

The conclusion of this study is: Debt To Equity Ratio (DER) has a negative effect on Return On Equity of defense sector companies. Efficiency has a positive effect on the Return On Equity of defense sector companies. Debt To Equity Ratio (DER) and Efficiency simultaneously influence the Return On Equity of defense sector companies. The magnitude of the effect of Debt To Equity Ratio (DER) and Efficiency on Return On Equity in defense sector companies is 66.3% and the remaining 33.7% is explained by other variables not examined in this study.

BIBLIOGRAPHY

Andika, S., & Suwitho, S. (2017). Pengaruh Rasio Likuiditas, Kualitas Aktiva, Sensitivitas, Efisiensi Dan Solvabilitas Terhadap Return On Equity (Roe) Pada Bank Pemerintah Di Bursa Efek Indonesia (BEI). *Jurnal Ilmu dan Riset Manajemen (JIRM)*, 6(7).

Cahyo Putro, S., Suwarno, P., & Asmoro, N. (2022). Faktor-faktor Dalam Peningkatan Laba Bersih Bumn Industri Pertahanan Studi Kasus Pada PT. Pindad (Persero). *Jurnal Cafetaria*, 3(1), 65-76.

Ghozali, Imam. 2018. Aplikasi Analisis Multivariate dengan Program IBM SPSS 25. Badan Penerbit Universitas Diponegoro: Semarang

Ginting, M. C. (2017). Pengaruh current ratio dan Debt to Equity Ratio (DER) terhadap financial distress pada perusahaan property & real estate di Bursa Efek Indonesia. *Jurnal Manajemen*, 3(2), 37-44.

Gujarati, Damodar, 2003, Ekonometri Dasar. Terjemahan: Sumarno Zain, Jakarta: Erlangga.

Lukmana, R. D. (2018). Pengaruh ROE, EPS, PER, DER dan PBV Terhadap Perubahan Harga Saham Pada Sub Sektor Perdagangan Eceran (Retail) Yang Terdaftar di BEI Periode 2012-2016 (Doctoral dissertation, University of Muhammadiyah Malang).

Nurlan, F. (2019). Metodologi penelitian kuantitatif. CV. Pilar Nusantara.

Pranadita, N. (2018). Perumusan Strategi Perusahaan Interaksi hukum dengan manajemen strategis dalam industri Pertahanan Indonesia. Deepublish.

Sugiyono. (2018). "Metode Penelitian Kuantitatif". Cetakan Pertama. Bandung: Alfabeta.