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The Influence of Production Costs and Operational Costs on Profitability in Manufacturing Companies

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Abstract

This research aims to determine the effect of operational costs on profitability in manufacturing companies listed on the Indonesia Stock Exchange. This research uses quantitative methods and the source data used is secondary data in the form of financial reports. The population in this study were 30 manufacturing companies operating in the industrial and chemical sectors on the Indonesia Stock Exchange for the period 2016 - 2020. The sampling technique used purposive sampling technique with a sampling method based on certain criteria. This research uses E-Views data processing with multiple linear regression estimation. The research results show that production costs have an effect on profitability while operational costs have no effect on profitability.

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INTRODUCTION

Global competition has begun, every country is preparing various kinds of quality products, technology and human resources to be able to compete with other countries. In 2015, the ASEAN Community took place, where there were 10 countries in Southeast Asia with the main aim of collaborating in matters of Political-Security, Economics (AEC), and Social Culture (Supriyono, 2004). However, in reality, this will still be seen as a competition between 10 countries that will show their respective abilities. One of the things that is of concern is the economic pillar and will certainly refer to the discussion of Human Resource capabilities in each country (Sugiyono, 2010).

Competition in the manufacturing industry in Indonesia is getting tighter, marked by the large number of imported products and illegal products that can easily enter the Indonesian market, thus becoming an obstacle for manufacturing companies in Indonesia to dominate the market (Sutiman 2018). The competitiveness of manufactured products is increasingly weakening. Domestically, manufactured products such as household electronics cannot compete with imported products, this is made even worse by the large number of illegal products. In the international market, textile products and wood products, which are still the favorites for exports, are unable to compete with products from China and other ASEAN countries.

The competition that occurs requires companies to be more competitive so as not to compete with other companies. Companies are not only required to be able to produce quality products for consumers, but also must be able to manage their finances well, meaning that financial management policies must be able to guarantee the sustainability of the company's business. Management policies in making appropriate decisions based on the results of measurement and evaluation of implementation The activities carried out by the company are one of the things that can influence the company to be able to compete (Zandra, 2016).

The Indonesian Stock Exchange (BEI) is one of the institutions in the capital market which was formed through a merger between the Jakarta Stock Exchange and the Surabaya Stock Exchange. Before the merger, the Jakarta Stock Exchange which operated in Jakarta was managed by the government-owned BAPEPAM (Winarso, 2014). The Surabaya Stock Exchange which operates in Surabaya is managed by the privately owned Surabaya Stock Exchange, and the parallel exchange is managed by the Money and Securities Trading Association (PPUE).

The aim of establishing the company is to fulfill human needs for products and maintain the company's existence, one of which is by increasing all company activities and optimizing the resources it has so that the company achieves the desired profit (Saputra, 2016). Profit is one of the most important components in running a company, because profit is additional income in the form of property, objects and money that is used to carry out company activities or operations . The profits obtained can be maximized by increasing sales of company products and minimizing operational costs.

Cost is one of the factors that influences the size of the profit obtained. Cost is an important component that must be considered in determining the selling price of a product or service. One of the costs that influences is production costs, production costs are the main costs incurred by manufacturing companies to gain income and profits. Production costs are the costs incurred to process raw materials into finished products (Zandra, 2016).

Operational costs incurred on the Indonesian Stock Exchange (BEI) consist of first, direct operational costs, which are costs incurred by companies to carry out direct operational activities (Nafarin, 2007). Second, indirect operational costs are costs incurred by the company to coordinate operational activities. In this case, controlling the operational costs of the Indonesian Stock Exchange (BEI) needs to be carried out so that operational costs are used as efficiently as possible and company revenues can be increased (Munawir, 2010).

The costs incurred by the company in operating need to be controlled as well as possible, because even though production and operations are running well, if it is not supported by efforts to keep the costs incurred by the company as low as possible, this will result in an increase in the costs

incurred. The high total production costs have an impact on sales levels, where the production costs incurred determine the selling price of a product or service which will later influence the amount of profit earned. In terms of operational costs, it is hoped that the company can use them efficiently, so that the company can achieve optimal profits. However, the problem that often occurs in companies is the large costs incurred to fulfill the company's operational activities which are not accompanied by an increase in profitability (Masdupi, 2014). If a company's operational costs decrease or increase, the company experiences problems in achieving maximum profits, resulting in a decrease in the company's profitability.

Operational costs certainly influence the profit that a company wants to achieve based on the sale of services or distribution and placement of workers both locally and overseas and the operational costs incurred by the company in carrying out company activities considering the importance of planning and monitoring operational costs in a company (Junaidi, 2016).

This research is motivated by research gaps in previous studies. Based on research conducted by Sutima (2018), it was concluded that operational costs and production costs influence profitability. However, this is different from research by Rosy Aprieza Puspita Zandra (2016), that operational costs have no effect on profitability.

The use of production costs and operational costs must be adjusted to suit needs, otherwise this will result in a decrease in the amount of profit and profit margin. To make this happen, there needs to be effective and efficient management of all important parts of the company.

RESEARCH METHODS

The method used in this research is descriptive method with a quantitative approach. The descriptive method aims to create a systematic, current and accurate description of the facts, characteristics and influences between the phenomena studied in manufacturing companies listed on the Indonesian Stock Exchange.

The descriptive method according to Sugiyono (2009:208) is, "Statistics is used to analyze data by describing it or illustrating the data that has been collected as it is without intending to make general conclusions or generalizations". Meanwhile, quantitative methods are research that emphasizes analysis of numerical data (numbers) and is useful for answering the second problem formulation, namely regarding the relationship between independent and dependent variables, where the independent variable is operational costs and the dependent is profitability (ROA) by looking at the results of financial reports in the form of profit/loss reports and company balance sheets. manufacturers listed on the Indonesia Stock Exchange for the period 201 6- 2020.

Population according to Sugiyono (2010:389) is a generalization area consisting of objects or subjects that have certain quantities and characteristics which are applied by researchers to study and then draw conclusions. The population in this study were 30 manufacturing companies listed on the IDX for the 2016-2020 period.

Selection of the best model between the Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM) using model estimation techniques. These two techniques are used in panel data regression. Two tests are used, first the chow test is used to choose between the common effect model or the fixed effect model. The two Hausman tests are used to choose between the best fixed effect model or random effect model in estimating panel data regression.

Test Chow

The chow test is a test to compare common effects with fixed effects (Widarjono, 2009). The chow test in this research used the Eviews program. The hypothesis formed in the chow test is as follows:

H0: The common effect model is appropriate

H1: the fixed effect model is appropriate

H0 is rejected if the P-value is smaller than the value $\alpha = 5\%$. Conversely, H0 is accepted if the P-value is greater than the α value.

This test compares fixed effect models with random effects in determining the best model to be used as a panel data regression model (Gujarati, 2012).

Hausman test

The Hausman test uses a program similar to the Chow test, namely the Eviews program. The

hypothesis formed in the Hausman test is as follows:

H0: the random effect model is appropriate

H1: the fixed effect model is appropriate

H0 is rejected if the P-value is smaller than the value α = 5%. Conversely, H0 is accepted if the P-value is greater than α.

Classic assumption test

The Normality Test aims to test whether in the regression model the confounding or residual variables have a normal distribution. In this study, to test variable normality, the Jarque-Bera test was used. If the significant value is > 0.05 then the data is normally distributed.

The autocorrelation test aims to test whether in the linear regression model there is a correlation between confounding errors in period t and confounding errors in period t-1 (previously). The way to detect whether there is autocorrelation in time series data can be using the Durbin Watson Test. If the value is below -2 to 2 it means there is no autocorrelation.

Multicollinearity test is carried out to test the existence of correlation between independent variables. A good regression model should have no correlation between independent variables. The multicollinearity test is carried out by calculating the variance inflation factor (VIF) value of each independent (free) variable. If the tolerance value is > 0.01 and VIF < 10 then multicollinearity does not occur (Ghozali, 2016). The Heteroscedasticity Test aims to test whether in the regression model there is a difference in residual variance from one observation period to another period. In this research, the method used to detect the presence or absence of heteroscedasticity uses the Glajser Test which is carried out using the Eviews program. If the significant value of all independent variables is above 0.05 then heteroscedasticity does not occur.

Hypothesis test

This t test was carried out to determine the relationship between the independent variable and the dependent variable partially with the hypothesis on corporations at the Indonesian Sharia Commercial Bank. The analysis is based on a significance value of 0.05 where the conditions are:

1. If the significance is <0.05 then the hypothesis is tested, which means the independent variable has a significant effect on the dependent variable.

2. If significance is > 0.05 then the hypothesis is tested, which means the independent variable has no significant effect on the dependent variable.

According to Ghozali (2016), the coefficient of determination test was carried out to determine the extent of the ability of the independent variable to explain the dependent variable being studied. The coefficient of determination value shows the percentage level of correctness of predictions from the regression testing carried out. In multiple regression what is considered is the Adjusted R2 value. According to Nazaruddin and Basuki (2015), if the Adjusted R2 is closer to 1, the greater the ability of the independent variable to explain the dependent variable being studied.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Table 1. Descriptive statistical results

	Y	X1	X2
Mean	1.232568	43.43176	89.51348
Median	1.345797	77.89435	89.69425
Maximum	12.46797	145.3900	913.6588
Minimum	-11.3452	34.53689	34.67000
Std. Dev	4.567893	15.83567	21.65799
Skewness	1.537268	3.665409	2.647086
Kurtosis	10.45735	40.53389	21.57942
Jarque-Bera	143.6754	1335.785	1876,343
Probability	0.000000	0.000000	0.000000

Sum	76.97466	2753,689	3124,798
Sum Sq. Dev	211.3257	31643.89	14877.22
Observations	30	30	30

Data processing results: E-Views 2024

Results of research descriptive statistics for each variable examined in manufacturing companies in 2016-2020. The number of valid data is 30. The results of descriptive statistical tests on Profitability (Y) show a maximum value of 12.46797 or 12.56% of Budi Starch & Sweetener Tbk in 2019. This means that the profitability of Beautiful Rainbow Canindo Tbk in 2019 is higher than that of another sample. Meanwhile, the minimum value was -11.3452 or -10.21% for Lotte Chemical Titan Tbk in 2017. This means that the profitability of Miscellaneous Industrial Gases Tbk in 2017 was lower than in the other samples.

Chow Test Results

Fixed Effect Model Panel Data Regression Estimation Results

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	12.09834	0.424564	14.64799	0.0000
X1	-0.137283	0.004325	-17.94326	0.0000
X2	0.231221	0.005468	0.439285	0.2352
Effects Specification				
Cross-section fixed (dummy variables)				
R-Squared	0.885367	Mean dependent var		1.382749
Adjusted R-Square	0.831432	SD dependent var		3.218394
SE of regression	0.452940	Akaike info criterion		2.016483
Sum squared resid	18.48204	Schwarz criterion		2.048364
Log likelihood	-51.90324	Hannan-Quinn Criter.		2.029474
F-statistic	122.8452	Durbin-Watson stat		2.048275
Prob(F-statistic)	0.000000			

Data Processed Results: E-Views 2024.

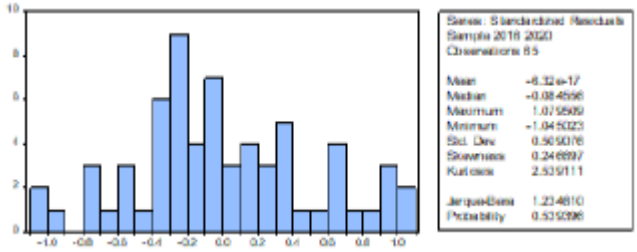
Based on table 2 above, it shows a constant value of 12.09834, meaning that if production costs and operational costs have no value, the manufacturing company's profitability is 12.09%.

Furthermore, the production cost coefficient value has a negative influence on profitability of -0.137283. This shows that if production costs increase by 1% it will cause profitability to decrease by -0.13%.

Furthermore, the operational cost coefficient value has a positive influence on profitability of 0.231221. This shows that if operational costs increase by 1% it will cause profitability to increase by 0.23%.

Normality test

Figure 1 Normality Test Results



Data processing results: E-Views 2024

Based on Figure 1 above, a profitability value of 0.539396 can be obtained or greater than the significance level used, namely 0.05 (0.539396 > 0.05), so it can be concluded that the data in this study is normal and passes the normality test.

Multicollinearity Test

Table 4 Multicollinearity Test Results

	X1	X2
X1	1.00000000000000000	0.06863416542985274
X2	0.06863416542985274	1.00000000000000000

Data processing results: E-Views 2024

Based on table 4 above, the independent variables, namely Production Costs and Operational Costs, in the research show that the correlation coefficient value for each variable is no more than 0.80, which means the data is free from symptoms of multicollinearity.

Hesteroscedasticity Test

Table 5 Hesteroscedasticity Test Results

Heteroskedasticity Test: Pagan-Godfrey			
F-statistic	2.932839	Prob. F(2.22)	0.1937
Obs*R-squared	4.192093	Prob. Chi- Square(2)	0.1293
Scaled explained SS	16.90362	Prob. Chi- Square(2)	0.0002

Data processing results: E-Views 2024

Based on table 5 above, it can be seen that the Prob.Chi -square value is greater than alpha 5% (0.1293 > 0.05). So this research is free from heteroscedasticity.

Autocorrelation Test

Table 6. Autocorrelation Test Results

F-statistic	18.89361	Durbin-Watson stat	1.201932
Prob(F-statistic)	0.000000		

Data processing results: E-Views 2024

Based on Table 6, the Durbin-Watson statistic is 1.201932 because the Durbin-Watson value is between 1 and 3, namely 1<1.201932<3, so there are no symptoms of autocorrelation in this study.

Partial Test (t Test)

Based on the panel data regression estimation table, the results of hypothesis testing on the Production Cost variable (X1) are 0.0000 < 0.05 so hypothesis one is accepted, which means

that Production Costs influence the profitability of manufacturing companies in 2016-2020.

Furthermore, the results of hypothesis testing for Operational Costs (X2) are 0.2352 > 0.05 so that hypothesis two is rejected, which means that Operational Costs have no effect on the profitability of manufacturing companies in 2006-2020.

Coefficient of Determination (R2)

Table 7. Coefficient of Determination Results (R2)

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	12.09834	0.424564	14.64799	0.0000
X1	-0.137283	0.004325	-17.94326	0.0000
X2	0.231221	0.005468	0.439285	0.2352
Effects Specification				
Cross-section fixed (dummy variables)				
R-Squared	0.885367	Mean dependent var		1.382749
Adjusted R-Square	0.831432	SD dependent var		3.218394
SE of regression	0.452940	Akaike info criterion		2.016483
Sum squared resid	18.48204	Schwarz criterion		2.048364
Log likelihood	-51.90324	Hannan-Quinn Criter.		2.029474
F-statistic	122.8452	Durbin-Watson stat		2.048275
Prob(F-statistic)	0.000000			

Data processing results: E-Views 2024

The result of the Adjusted R-Squared value in this research is 0.831432. This shows the ability of the independent variables, namely Production Costs and Operational Costs, to explain the dependent variable profitability, namely 83%, while the remaining 17% is caused by other variables not included in this research. based on research (Azhari, 2019). The coefficient of determination value is quite good (more than 50%). This means that the ability of the independent variable to explain the dependent variable in this research is quite good.

Discussion

This discussion focuses on explaining the findings of this research by comparing the data and information obtained from the research object and the results of previous research. The higher the variable production costs and operational costs, the more it will affect profitability. This can be seen from the tcount for production costs of 7,479, while the table with a significant level of 0.05 is 2.353 or 7,479 > 2.353 with a significant value of 0.002. This means that production costs have a positive effect on profitability in manufacturing companies listed on the Indonesian Stock Exchange for the 2016 period. -2020. The results of this research are in line with previous research conducted by Sutima (2018), The influence of production costs on profitability with production costs as the independent variable (X) and profitability as the dependent variable (Y). Results of this research shows that there is a positive and significant influence between production costs on profitability. And research conducted by Widi Winarso (2014), The effect of operational costs on profitability (ROA), with operational costs as the independent variable (X) and profitability as the dependent variable (Y). The results of this research indicate that operational costs have no effect on profitability (ROA).

In contrast to research conducted by Rosy Aprieza Puspita Zandra (2016), the influence of operational costs and inventory turnover on profitability, with operational costs and inventory turnover as independent variables (X1 and X2) and profitability as the dependent variable (Y), with the results of this research showing that partially the operational cost variable (X1) has no effect on profitability (Y) where the sig t value is 0.578 > 0.05 and the inventory turnover variable (X2) partially has no effect on profitability (Y) with the sig t value 0.689 > 0.05 . And previous research conducted by Titin Hartini (2016), The influence of operational costs and operational income (BOPO) on profitability with operational costs as the independent variable (X) and profitability as the dependent variable (Y). The results of this research show that BOPO has a negative influence on profitability.

CONCLUSION

This research aims to analyze and determine the effect of production costs and operational costs on profitability in manufacturing companies listed on the Indonesian Stock Exchange for the 2016 - 2020 period.

Based on the analysis and discussion regarding the Influence of Production Costs and Operational Costs on Profitability in Manufacturing Companies Listed on the Indonesian Stock Exchange for the 2016 - 2020 Period. So, conclusions can be drawn from the results of statistical tests showing that the production cost variable has an effect on profitability while the operational cost variable has no effect. This research is in line with previous research conducted by Sutima (2018), The influence of production costs on profitability with operational costs as the independent variable (X) and profitability as the dependent variable (Y). The results of this research show that there is a positive and significant influence between production costs and profitability. This research hypothesis states that Production Costs influence Profitability in Manufacturing Companies Listed on the Indonesian Stock Exchange for the 2016 - 2020 Period. Thus the hypothesis is proven and accepted.

Production costs and operational costs are important for companies, therefore manufacturing companies listed on the Indonesia Stock Exchange are able to increase their company's operational costs so that company operations experience an increase. It is hoped that future academics and prospective researchers will be able to expand their studies to develop the concept of company profitability and be able to examine other factors that have not been researched.

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