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Factors that Influence Profitability in the Industrial and Chemical Companies Listed on Indonesia Stock Exchange

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ABSTRACT

This study aims to determine whether Firm Size, Debt to Equity Ratio, and Working Capital Turnover Ratio partially or simultaneously give a significant effect on profitability in the basic industrial and chemical sector companies listed on the Indonesia Stock Exchange. The method uses in this study is a quantitative approach, a type of descriptive research, the nature of explanatory research. The type of data uses is secondary data. While the purposive sampling method is employed as a sample collection technique. The population is 69 companies and the sample of 27 samples (108 samples in 4 years). The test results of the coefficient of determination show Firm Size, Debt to Equity Ratio, and Working Capital Turnover Ratio to Profitability of 34.5%. It can be concluded that Firm Size, Debt to Equity Ratio, Working Capital Turnover Ratio simultaneously affect Profitability in the basic industrial and chemical sector companies listed on the Indonesia Stock Exchange from 2014-2017. Profitability does not affect Firm Size, but Debt Equity Ratio has a negative effect on profitability. On the other hand, Working Capital Turnover has a positive effect on profitability in the basic and chemical industry companies listed on the Indonesia Stock Exchange.

INTRODUCTION

Many business developments are carried out by competitive companies listed on the Indonesian stock exchange with the aim of earning profits to maintain the company`s survival.

A high solvency ratio has a large loss, but there is also an opportunity to get bigger profits. The researcher used Debt to Equity Ratio as a substitute for solvability ratios where this ratio can show the ability of the company's capital to fulfil its obligations.

There is a lot of working capital in operational activities to directly meet the costs of routine company activities that continue to rotate as long as the company is still running and will end when the company is liquidated or dissolved. The use of working capital must be monitored, regulated and controlled in order to get the desired profit.

The size of an asset owned by a company can be described as a measure of the company in increasing the company's own capital. The size of the company can affect profitability because the larger a company, the more capital it has that allows the company to get a higher profit.

Profitability is the same as generating profit. Researchers use the ratio of return on assets as a substitute for profitability ratios. High return on assets illustrates the existence of large profits obtained, depending on each company in obtaining it. An increase or decrease in return on assets can be influenced by several factors, such as Firm Size, Debt to Equity Ratio, working capital turnover ratio.

Based on the above things, the researchers want to test whether the explanation above can improve the company's financial performance seen in the basic industrial and chemical sectors listed on the Indonesia Stock Exchange for the period 2014-2017. Below this is using Firm Size, Debt to Equity Ratio, and Working Capital Turnover Ratio.

Firm Size

According to Wikardi, Dewi and Wiyani (2017), company size can be expressed by the total assets of the company. The size of the company reflects how the company can manage its resources to the maximum extent possible. According to Hermuningsih (2012), the size of the company can be stated as follows:

$$\textit{Firm Size} = \text{Ln } \textit{Total Asset}$$

Debt to Equity Ratio

According to Marberya and Suaryana (2006), Debt to Equity Ratio is a comparison that shows how much debt the company uses and an explanation of the size of the source of funds for the assets owned by the company. According to Fatimatuz (2016), the DER formula is:

$$\text{DER} = \frac{Total\ debt}{Total\ Equity}$$

Working Capital Turnover Ratio

According to Widiyanti, Marlina, and Samadi (2014), this ratio shows the relationship between working capital and the company's sales proceeds for each working capital. According to Azlina (2009), the working capital turnover formulation is:

$$\text{WCTO} = \frac{net\ sales}{net\ \ working\ capital}$$

Profitability

Nofrita (2013) states that profitability is the net profit generated from the company's activities in the current year. According to Arilaha (2009), profitability is an appropriate assessment based on the rate of return obtained from its investment activities. While according to Nurhayati (2013), the formulation of profitability (ROA) is as follows:

$$\text{ROA} = \frac{net\ profit}{total\ asset}$$

Effect of Firm Size on Profitability

According to Ratnasari et al (2018), large companies tend to have greater scale and economic flexibility than small companies, so it will be easier to get a loan which will ultimately increase the profitability of the company.

According to Fachrudin (2011) Firm size is not a guarantee that the company has the ability to generate good profits. While according to Sari and Budiasih (2014) This insignificant effect is due to the greater size of a company, then the company requires greater costs also to carry out operational activities such as labour costs, administrative costs, and others so that it will be able to reduce the profitability of the company.

Effect of DER on Profitability

According to Afrinda (2012), the higher the solvency of the company the lower the company's ability to generate profits. While, according to Purnamasari (2017), The funding policy reflected in the Debt to Equity Ratio (DER) greatly affect the achievement of the profit obtained by the company.

According to Fitri, Supriyanto, and Abrar (2016), The higher DER shows the great trust from outside parties, it is very possible to improve the performance of the company, because with large capital then the opportunity to achieve the level of profit is also large.

Effect of WCTO on Profitability

According to Utami and Prasetiono (2016), working capital turnover is when cash is invested into working capital components such as raw materials, labour, and BOP which are processed into finished goods sold and become sales that increase profitability.

According to Fitri, Supriyanto, and Abrar (2016), working capital turnover can affect the level of profitability. If the low level of profitability associated with working capital can indicate the possibility of lower sales volume compared to the costs used.

According to Ginting (2018), The higher working capital turnover the better performance of a company where the percentage of working capital there can generate sales with a certain amount. The greater this ratio indicates the effective utilization of working capital available in increasing the profitability of the company.

Conceptual Framework and Hypothesis

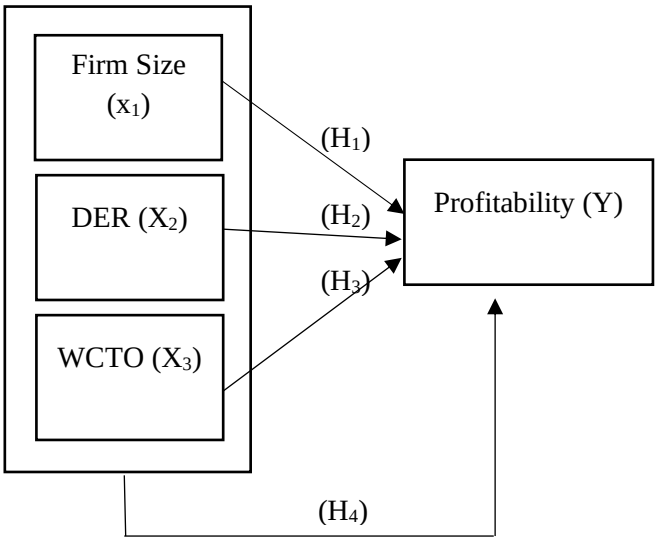

Chart 1: Conceptual Framework

Based on the conceptual framework, the hypothesis that can be developed in this study as follows:

H1: Firm Size has a partial effect on profitability in basic industrial and chemical sector companies listed on the Indonesia Stock Exchange from 2014-2017.

H2: Debt to Equity Ratio has a partial effect on profitability in basic industrial and chemical sector companies listed on the Indonesia Stock Exchange from 2014-2017.

H3: Working Capital Turnover Ratio partially affects profitability in basic industrial and chemical sector companies listed on the Indonesia Stock Exchange from 2014-2017.

H4: Firm Size, Debt to Equity Ratio, and Working Capital Turnover Ratio have a simultaneous effect on profitability in basic industrial and chemical sector companies listed on the Indonesia Stock Exchange from 2014-2017.

METHODS

In this study, the researcher used quantitative descriptive research. The data used is quantitative data in the form of financial statements issued by the company, with a secondary data source obtained by downloading from the official site of the Indonesia stock exchange. In this study, the researcher uses the population in the basic industrial and chemical companies listed on the Indonesia Stock Exchange from 2014-2017. The data used is quantitative data in the form of financial statements published by companies, with secondary data sources obtained by downloading through the official website of the IDX. The population of this company were 69 companies. Some of the characteristics specified are: (1). Basic and chemical industry companies

listed on the Indonesia Stock Exchange during the period 2014-2017. (2). Basic and chemical industry companies that earn profits during the period 2014-2017. (3). Basic and chemical industry companies that publish financial statements in a row for the 2014-2017 period. The total sample obtained were 27 companies multiplied by 4 years of observation to 108 as the object of observation.

The type of data used was secondary data sourced from the financial statements of basic and chemical industry sectors listed on the Indonesia Stock Exchange from 2014-2017.

No	Criteria	Number of Samples
1	Basic and chemical industry companies listed on the Indonesia Stock Exchange in 2014-2017.	69
2	Basic and chemical industry companies that have not published financial statements in a row from 2014-2017.	(15)
3	Basic and chemical industry companies that suffered losses on the Indonesia Stock Exchange in 2014-2017.	(27)
	The number of companies that became the study sample	27
	Year of observation	4
	Total sample during the study period	108

Table 1: Research samples
Processed Data (2018) [source]

Identification and Operational Definition of Research Variables

Research variable

1. The independent variables in this study are Firm Size (X1), Debt To Equity Ratio (X2), and Working Capital Turnover Ratio (X3).
2. The dependent variable in this study is Profitability (Y).

Variable Operational Definition

1. Firm Size (X1)
   Company size is measured using LN (total assets) to find out how much the basic industrial and chemical sector companies on the IDX in 2014-2017.

2. *Debt To Equity Ratio* (X_2)
   DER is a comparison between company debt and company equity in basic and chemical industry companies on the IDX in 2014-2017.

3. Working Capital Turnover Ratio (X3)
   WCTO is a comparison between company sales and working capital owned by the company at the basic and chemical industry on the IDX in 2014-2017.

4. Profitability (Y)
   Profitability is measured using a comparison between the company's net profit and the total assets of the company in basic and chemical industry companies on the IDX in 2014-2017.

RESULTS AND DISCUSSION

Descriptive statistics

Descriptive statistical analysis is an analysis tool used to see the value of the variable Firm Size, Debt to Equity Ratio, working capital turnover ratio, and profitability. The results of the descriptive statistical analysis of the study can be looked at.

	N	Min	Max	Mean	Std. Deviation
Firm size	108	16.57	31.12	24.9731	3.68390
DER	108	-6.93	94.10	1.6758	9.11818
WCTO	108	-5.99	25.02	.8065	3.41132
Profitability	108	.00	.37	.0636	.05738
Valid N (listwise)	108				

Table 2: Descriptive Statistic
Processed Data (2018) [source]

From the table above, it is explained from 108 samples (N) of financial statements, minimum Firm Size value data with number 16.57, maximum value with number 31.12, mean value with number 24.9731, and standard deviation value 3.68390.

The minimum value of Debt to Equity Ratio is -6.93, the maximum value is 94.10, and the mean value is 1.6758, and the standard deviation value is 9.11818.

The minimum value of the Working Capital Turnover Ratio is -5.99, the maximum value is 25.02, and the mean value is 0.8065, and the standard deviation value is 3.41132.

The minimum profitability value is 0.00, the maximum value is 0.37, the mean value is 0.0636 and the standard deviation value is 0.05738.

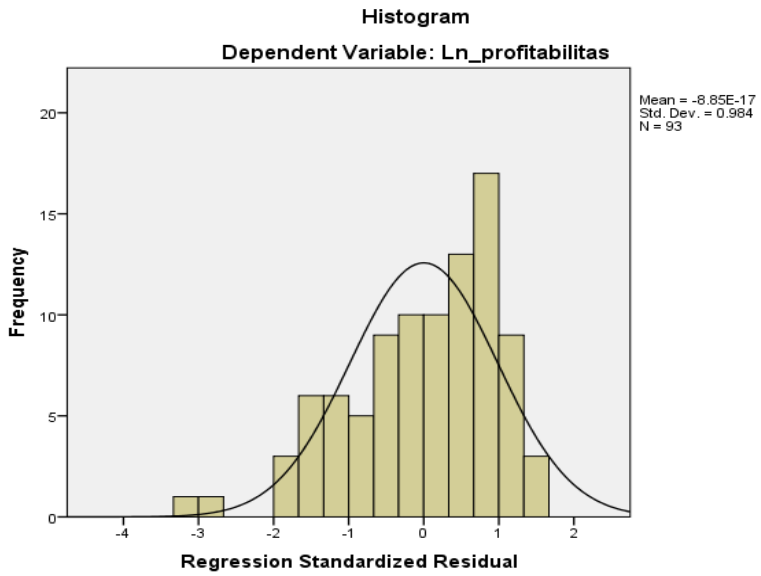

Chart 2: Normality Test Results
Processed Data (2018) [source]

From the histogram graph in Chart 2 above, it can be concluded that the residual data is normally distributed because the histogram graph shows the distribution of data that follows a bell-shaped curve without skewing left or right.

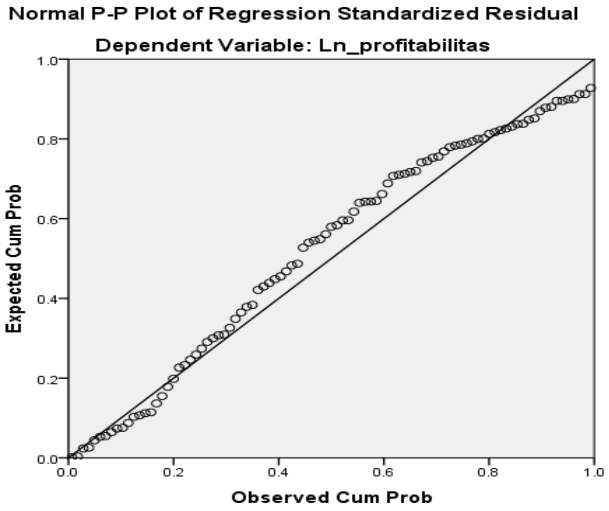

Chart 3: P-Plot Test Results
Processed Data (2018) [source]

In Chart 3 above, you can see the points following the diagonal line, it can be concluded that the data in the regression model meet the assumptions of normality.

		Unstandardized Residual
N		93
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	.72269294
Most Extreme Differences	Absolute	.097
	Positive	.073
	Negative	-.097
Kolmogorov-Smirnov Z		.939
Asymp. Sig. (2-tailed)		.341

Table 3: K-S Test Result
Processed Data (2018) [source]

The Kolmogorov-Smirnov statistical test shows a significant value of 0.341 which is greater than the significant value of 0.05, so the results of the Kolmogorov-Smirnov normality test can be concluded that the data are normally distributed. Because the data has been normally distributed, other classic assumptions can be tested.

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Ln_fs	.988	1.012
	Ln_der	.898	1.113

	Ln_wcto	.903	1.107

Table 4: Multicollienearity Test Result
Processed Data (2018)

Based on table 4, it can be seen that the tolerance value obtained for each variable is greater than 0.10 and the VIF value obtained for each variable is less than 10, meaning that the data are Firm Size variables, Debt to Equity Ratio, and Working Capital Turnover Ratio free from the symptoms of multicollinearity.

Model	Durbin-Watson
1	1.792

Table 5: Autocorrelation Test Result
Processed Data (2018) [source]

Table 5 shows the results of the Durbin-Watson test showing that the value of Durbin-Watson is 1.792 while in the DW table for "k" = 3 (the independent variable does not include the dependent variable) and N = 108 the value of dl and du by looking at the DW table is:

dl (lower limit) = 1.6237
du (upper limit) = 1.7411
4 - dl = 2,3763
4 - du = 2.2589

By looking at the criteria for the Durbin-Watson guideline, the value of du <d <4 - du or 1.7411 <1.792 <2.2589 then the results of the autocorrelation test did not occur positive or negative autocorrelation.

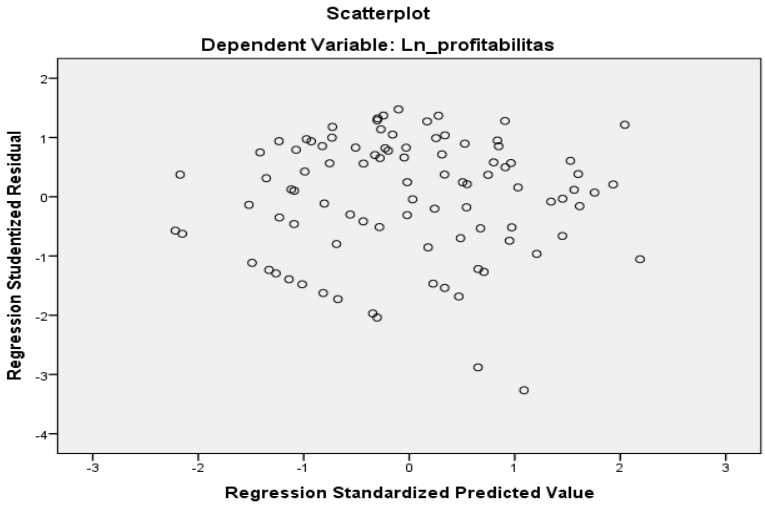

Chart 4: Scatterplot Test Results
Processed Data (2018) [source]

Based on Chart 4, there are randomly scattered dots above and below zero (0) on the Y axis, not clustered together in one place, so that the scatterplot graph can be concluded that there is no heteroscedasticity in the regression model.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.996	4.996		-.399	.690
	Ln_fs	-1.839	1.564	-.120	-1.176	.243
	Ln_der	-.337	.256	-.138	-1.318	.191
	Ln_wcto	-.273	.195	-.146	-1.403	.164

Table 6: Heteroscedasticity Test Results
Processed Data (2018) [source]

Table 6 shows, LNFirm Size (X1) with a significant value of 0.243, LNDebt to Equity Ratio (X2) has a significant value of 0.191, and LN Stocking Capital Turnover Ratio (X3) with a significant value of 0.164. Each variable has a significant value of more than 0.05.

Based on the explanation above, it can be stated that there is no heteroscedasticity between independent variables in the regression model, because the significant values of variables X1, X2, and X3 are greater than 0.05.

Multiple Linear Analysis Test

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	-1.634	1.483
	Ln_fs	-.437	.464
	Ln_der	-.543	.080
	Ln_wcto	.256	.061

Table 7: Heteroscedasticity Test Results
Processed Data (2018) [source]

The equation of multiple linear regression in this study based on table 7 is as follows:
LNY = –1,634 – 0,437LNX1 – 0,543LNX2 + 0,256X3 + e

Where:

1. Constant value of –1,634 if the LN Firm Size (X1), LN Debt to Equity Ratio (X2), LN Working.
   Capital Turnover Ratio (X3) variables are considered zero, then LN Profitability (Y) in basic industrial and chemical sector companies listed on the Indonesia Stock Exchange in 2014-2017 decreased by 1,634.

2. LN Firm Size regression coefficient of –0.437 states that for every increase in Firm Size once, the return rate will decrease by 0.437.

3. The regression coefficient of LN Debt to Equity Ratio of -0.543 states that every one-time decrease in the Debt to Equity Ratio, the return rate will decrease by 0.543.

4. LN regression coefficient Working Capital Turnover Ratio of 0.256 states that every increase in the one-time working capital turnover ratio, the return rate will increase by 0.256.

Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605[a]	.366	.345	.73477

Table 8: Coefficient of Determination
Processed Data (2018) [source]

Table 8 shows the Adjusted R Square value (R2) determination coefficient of 0.345 or equal to 34.5% of the variation of the independent variable with Firm Size (X1), Debt to Equity Ratio (X2), Working Capital Turnover Ratio (X3). While the remaining 65.5% (100% - 34.5%) is explained by other variables outside the research variable.

F Test (Simultaneous)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.779	3	9.260	17.151	.000[b]
	Residual	48.050	89	.540		
	Total	75.829	92			

Table 9: Simultaneous Test Result
Processed Data (2018) [source]

Based on table 9, the F test is obtained by the value of Fcount of 17.151 with a significant value of 0,000 on Ftable with a confidence level of 0.95 with a significance of 0.05, df1 (number of variables-1) = 3 and df2 (Nk-1) = 104 (where k = number of variables and N = lots of data) with Ftable value of 2.69, then obtained Fcount 17.151> Ftable 2.69 with a significant value of 0,000 <0.05, then H0 is rejected which means variable Firm Size (X1), Debt to Equity Ratio (X2), the Working Capital Turnover Ratio (X3) simultaneously has a significant effect on profitability (Y) in the basic industrial and chemical companies listed on the Indonesia Stock Exchange in 2014-2017.

T-Test (Partial)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.634	1.483		-1.102	.273
	Ln_fs	-.437	.464	-.080	-.941	.349
	Ln_der	-.543	.080	-.607	-6.822	.000
	Ln_wcto	.256	.061	.374	4.211	.000

Table 10: Partial Test Result
Processed Data (2018) [source]

From table 10 the partial test results can be seen as follows:

1. The results of the partial test (t-test) X1 is Firm Size shows t value is -0.941 with a significant value of 0.349 while t table :N-k-1 = 108-3-1 = 104 is 1.65964 with significant value 0.05. The conclusion is t > ttable (-0.941>-1.65964) with a significant value above 0.05 (0.349>0.05), H0 is accepted which means that partially Firm Size (X1) variable does not have a negative and not significant effect on profitability (Y) in basic industry and chemicals sector listed on the Indonesia Stock Exchange from 2014-2017. The results of this study do not support Ratnasari et al (2018) study which states that Firm Size variable effects profitability.

2. The results of the partial test (t-test) X2 is Debt to Equity Ratio shows t value is -6,822 with a significant value of 0.000 while t table : N-k-1 = 108-3-1 = 104 is 1,65964 with a significant value 0.05. In conclusion, t <ttable (-6.822 < -1.65964) with a significant value under 0.05 (0.000 <0.05), H_0 is rejected which means that partially the variable Debt to Equity Ratio (X2) has an effect and is negative and significant to profitability (Y) in basic industry and chemicals sector listed on the Indonesia Stock Exchange from 2014-2017. The results support the research of Afrinda (2012) which states are the result of research partially Debt to Equity effect on profitability.

3. The results of the partial test (t-test) X3 is Working Capital Turnover Ratio shows the value of 4.211 with a significant value of 0,000 while t table: N-k-1 = 108-3-1 = 104 is 1.65964 with a significant value 0.05. In conclusion t> ttable (4.211>1.65964) with a significant value under 0.05 (0.000 <0.05), H_0 is rejected which means that partially the Working Capital Turnover Ratio (X3) has a positive and significant effect on profitability (Y) in the registered basic and chemicals sector listed on the Indonesia Stock Exchange from 2014-2017. The results support the research Utami (2016) which states are the result of research partially working capital turnover affects profitability.

CONCLUSION

This study intends to examine the influence of Debt to Equity Ratio, Working Capital Turnover Ratio and Firm Size in basic and chemicals sector companies listed on the Indonesian Stock Exchange. By using a purposive sampling approach, this study obtained 27 companies as a sample during the 2014-2017 periods. In total, there are 108 observations.

The results of hypothesis testing using SPSS obtained that simultaneously Firm Size, Debt to Equity Ratio and Working Capital Turnover Ratio affect the profitability of basic industry and chemicals sector companies listed on the Indonesia Stock Exchange in 2014-2017. This study concludes that both Debt to Equity Ratio and Working Capital Turnover Ratio have a partially positive influence on profitability while Firm Size does not affect profitability in basic and chemicals sector companies in the Indonesia Stock Exchange in 2014-2017.

The theoretical implication that can be obtained from this study is that the results of this research can add insight and knowledge for the development of science in the field of financial accounting. While practically, this research is beneficial to the Indonesian Government related to tax by the

corporation as taxpayers and the investor making the decision to choose investment in the shares of the company.

This study only examines basic and chemicals companies for the period of 2014-2017. It is possible to obtain different results if the analysis involves other types of companies, different periods of time, or other statistical models.

For other researchers who are interested in researching the same topic, this research model can be further developed while considering different settings, population, independent variables and possibly also increase the period of the observation.

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