



# Effect of Working Capital Turnover on Economic Profitability at PT. Vale Indonesia, Tbk

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## ABSTRACT

This study aims to provide empirical evidence regarding whether or not there is an influence or relationship between working capital turnover and economic profitability at PT. Vale Indonesia, Tbk. The type of research used is quantitative research with data analysis techniques that become the research reference, namely based on the financial ratio measurement scale and statistical analysis using SPSS version 16. The results show that there is a significant effect of working capital turnover on economic profitability as indicated by the t-test which is significant at 0.003 which is less than 0.05 or  $sig < 0.05$ .  $t_{count} > t_{table}$  that is  $5.506 > 2.571$  then  $H_0$  is rejected, and  $H_a$  is accepted. The correlation coefficient is 0.927, meaning that the relationship between working capital turnover (X) and economic profitability (Y) is very strong, which is in the range of 0.80 - 1,000 based on *Pearson's provisions*. While the value of the coefficient of determination ( $R^2$ ) is 0.858. This means that working capital turnover (X) affects economic profitability (Y) by 85.8 % and the remaining 14.2% is influenced by other variables not included in the study.

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## INTRODUCTION

The company is classified as an organization in various segments and fields. The company has an important element in the process of its establishment to achieve organizational goals (Fauziyyah et. al, 2017). One of these elements is capital. Capital is the initial foundation and benchmark of the establishment of business history. A business cannot grow if there is no capital. Working capital is all assets used by the company for operational activities that must be managed properly to increase productivity (Hendry, 2013). Working capital is the funds needed to meet the needs of the company's daily operational activities (Sutrisno, 2017). Working capital is an investment in cash and other assets classified as current assets. Harahap (2013: 288) argues that "working capital is current assets minus current liabilities, where working capital is considered as funds available for investment in non-current assets and non-current debt". For this reason, it can be summarized that working capital is an absolute asset that must exist for the company to use it to fund its operations.

Working capital is an absolute element that must be available for every industry. A good working capital turnover will affect industrial profits (Achmad, 2014). However, if judging the good or bad financial performance of a company from the level of funds alone, it is not a standard that the

company has developed optimally, for it is necessary to measure financial performance by calculating its profitability. Kasmir (2014: 195) "profitability is a ratio to assess the company's ability to seek profit, profitability describes the potential and productive level of the company's administration in sales and investment income to achieve maximum profit". Economic profitability is the productive value of working capital in terms of the effectiveness of the company's success to achieve optimal and maximum profits. The company's success in achieving economic profitability can be seen from the side of productive working capital turnover. PT. Vale Indonesia, Tbk is a mining company that on May 16, 1990, was incorporated into the IDX-Indonesian stock exchange. INCO is a company that helps support the local community's economy. PT Vale has experienced ups and downs in maintaining its performance. From 2015 to 2016 PT Vale fluctuated in profit. Fulfillment of working capital, and operational waste is a problems caused by the efficiency of capital use. In 2017 PT Vale also suffered losses due to low nickel prices with high capital expenditures which had a negative impact on inefficient working capital turnover and caused losses.

In an effort to realize the achievement of efficient company operations, it is necessary to look at the working capital turnover and economic profitability. The purpose of this research is to provide valid evidence regarding the relationship between working capital turnover and economic profitability in mining industries such as PT Vale.

## RESEARCH METHOD

This study uses quantitative research methods, namely research that can measure numbers using statistical techniques. The numerical data is obtained from the internet through the website [www.idx.co.id](http://www.idx.co.id) in the form of an annual financial report for the 2014-2020 period published by the company concerned.

The data analysis techniques used in this research are

### 1) Financial Analysis

According to Kasmir (2014: 183), working capital turnover (X) can be calculated by the following formula:

$$\text{Perputaran Modal Kerja} = \frac{\text{Pendapatan}}{\text{Modal Kerja rata-rata}}$$

$$\text{Modal Kerja Rata-Rata} = \frac{\text{Aktiva Lancar} - \text{Utang Lancar}}{2}$$

According to Kasmir (2014:240), economic profitability (Y) can be calculated using the following formula:

$$\text{Rentabilitas Ekonomi} = \frac{\text{Laba Sebelum Pajak}}{\text{Total Aktiva}} \times 100\%$$

### 2. Statistic analysis

To determine the effect of working capital turnover on economic profitability, a simple linear regression analysis formula is used, where this analysis is processed using the SPSS for windows version 16 program. According to Yudiaatmaja, and Fridayana (2013: 6) the simple regression equation model is as follows:

$$Y = a + bx$$

The values of a and b can be calculated by the following formula:

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

Where: y = Economic Profitability  
x = Working Capital Turnover  
a = value of y, if x = 0

b = Number of directions or correlation coefficient of regression.  
 n = Measurement of the number of samples

3. Hypothesis testing

The following hypothesis tests are used to ensure the effect test in this study:

Ha = There is an effect of working capital turnover on economic profitability

H<sub>0</sub> = There is no effect of working capital turnover on economic profitability

To determine whether the regression coefficient is significant or not, we can test the hypothesis in the following way:

1. The hypothesis test compares T value (t-test)

The basis for making decisions in this t-test is:

a. If the value of the t<sub>count</sub> is greater than the t<sub>table</sub>, then there is an effect of Working Capital Effect (X) on Economic Profitability (Y)

b. other hands, if the t<sub>count</sub> is less than the t<sub>table</sub>, then there is no effect of working capital turnover (X) on economic profitability (Y)

2. Based on probability

If P-value < 0.05 (then H<sub>0</sub> is rejected, Ha is accepted)

If P-value > 0.05 (then H<sub>0</sub> is accepted, Ha is rejected)

3. Seeing the magnitude of the influence of variable X on variable Y.

To determine the magnitude of the effect of Working Capital Turnover (X) on Economic Profitability (Y) in a simple regression analysis, we can refer to the value of R Square (R<sup>2</sup>).

## RESULTS AND DISCUSSIONS

The results of this study show an analysis of financial statements that have a function as a tool to make decisions in the future. The balance sheet and profit/loss statement are financial statements that are applied to this research. The form of analysis required is an analysis of financial ratios in terms of working capital turnover ratios and economic profitability ratios as well as statistical analysis that is useful for determining the effect of working capital turnover variables on economic profitability variables.

Analysis of the working capital turnover ratio is used, aiming to see the number of periods of working capital turnover, while the use of economic profitability ratios is intended to see the effectiveness of the company in using its working capital in achieving optimal profits.

To obtain clear information about the conditions of working capital turnover and economic profitability at PT. Vale Indonesia, Tbk for the period 2014-2020, the following formula is used:

1. Financial Analysis

According to Kasmir (2014: 183), working capital turnover (X) can be calculated by the following formula:

$$\text{Perputaran Modal Kerja} = \frac{\text{Pendapatan}}{\text{Modal Kerja rata-rata}}$$

$$\text{Modal Kerja Rata-Rata} = \text{Aktiva Lancar-Utang Lancar}$$

Table 1 Working Capital Turnover PT. Vale Indonesia, Tbk Period 2014-2020

Year	Calculation in US Dollars	Calculation in Rupiah
2014	Working capital turnover = $\frac{\$1,038,082,000}{\$413,044,000}$ = 2.5 times	Working capital turnover = $\frac{\text{Rp } 14,921,079,243,400}{\text{Rp } 5,936,970,542,800}$ = 2.5 times
2015	Working capital turnover =	Working capital turnover =

Year	Calculation in US Dollars	Calculation in Rupiah
	$\frac{\$789,745,000}{\$446,401,000}$ = 1.8 times	$\frac{\text{Rp } 11,351,557,706,500}{\text{Rp } 6,416,434,053,700}$ = 1.8 times
2016	Working capital turnover = $\frac{\$584,143,000}{\$467,165,000}$ = 1.3 times	Working capital turnover = $\frac{\text{Rp } 8,396,296,239,100}{\text{Rp } 6,714,889,560,500}$ = 1.3 times
2017	Working capital turnover = $\frac{\$629,334,000}{\$467,756,000}$ = 1.3 times	Working capital turnover = $\frac{\text{Rp } 9,045,858,115,800}{\text{Rp } 6,723,384,417,200}$ = 1.3 times
2018	Working capital turnover = $\frac{\$776.9 \text{ million}}{\$455.658,000}$ = 1.7 times	Working capital turnover = $\frac{\text{Rp } 11,166,927,530,000}{\text{Rp } 6,549,491,394,600}$ = 1.7 times
2019	Working capital turnover = $\frac{\$782,012,000}{\$451.761,000}$ = 1.7 times	Working capital turnover = $\frac{\text{Rp } 11,240,405,884,400}{\text{Rp } 6,493,477,085,700}$ = 1.7 times
2020	Working capital turnover = $\frac{\$764,744,000}{\$535,262,000}$ = 1.4 times	Working capital turnover = $\frac{\text{Rp } 10,992,200,832,800}{\text{Rp } 7,693,695,409,400}$ = 1.4 times

Source: Financial Report, Data has been processed

According to Kasmir (2014:240), economic profitability (Y) can be calculated using the following formula:

$$\text{Rentabilitas Ekonomi} = \frac{\text{Laba Sebelum Pajak}}{\text{Total Aktiva}} \times 100\%$$

Table 2 Economic Profit PT. Vale Indonesia, Tbk Period 2014-2020

Year	Calculation in US Dollars	Calculation in Rupiah
2014	Economic Profitability = $\frac{\$ 249.445.000}{\$ 2.334.290.000} \times 100\%$ = 10.69%	Economic Profitability = $\frac{\text{Rp } 3.585.447.596.500}{\text{Rp } 33.552.384.173.000} \times 100\%$ = 10.69%
2015	Economic Profitability = $\frac{\$ 79.751.000}{\$ 2.289.161.000} \times 100\%$ = 3.48%	Economic Profitability = $\frac{\text{Rp } 1.146.316.948.700}{\text{Rp } 32.903.713.465.700} \times 100\%$ = 3.48%
2016	Economic Profitability = $\frac{\$ 14.298.000}{\$ 2.225.492.000} \times 100\%$ = 0.64%	Economic Profitability = $\frac{\text{Rp } 205.515.162.600}{\text{Rp } 31.988.554.360.400} \times 100\%$ = 0.64%
2017	Economic Profitability = $\frac{(\$ 17.978.000)}{\$ 2.184.559.000} \times 100\%$ = ( 0,82 %)	Economic Profitability = $\frac{(\text{Rp } 258.410.378.600)}{\text{Rp } 31.400.195.698.300} \times 100\%$ = ( 0,82 %)
2018	Economic Profitability = $\frac{\$ 84.854.000}{\$ 2.202.452.000} \times 100\%$	Economic Profitability = $\frac{\text{Rp } 1.219.665.939.800}{\text{Rp } 31.657.384.312.400} \times 100\%$

Year	Calculation in US Dollars	Calculation in Rupiah
	= 3.85%	= 3.85%
2019	Economic Profitability = $\frac{\$ 89.524.000}{\$ 2.222.688.000} \times 100\%$ = 4.03%	Economic Profitability = $\frac{\text{Rp } 1.286.791.118.800}{\text{Rp } 31.948.250.505.600} \times 100\%$ = 4.03%
2020	Economic Profitability = $\frac{\$ 103.854.000}{\$ 2.314.658.000} \times 100\%$ = 4.49%	Economic Profitability = $\frac{\text{Rp } 1.492.766.239.800}{\text{Rp } 33.270.199.694.600} \times 100\%$ = 4.49%

Source: Financial Report, Data has been processed

Based on the calculations above, the results of the analysis of working capital turnover and economic profitability at PT. Vale Indonesia, Tbk period 2014-2020 as presented in the following table:

Table 3 Indicator Data of Working Capital Turnover and Economic Profitability PT. Vale Indonesia, Tbk Period 2014-2020

YEAR	WORKING CAPITAL TURNOVER (X)	ECONOMIC PROFITABILITY (Y)
2014	2.5 times	10.69%
2015	1.8 times	3.48%
2016	1.3 times	0.64%
2017	1.3 times	( 0.82 % )
2018	1.7 times	3.85%
2019	1.7 times	4.03%
2020	1.4 times	4.49%

Source: Financial Report, Data has been processed

In the table above, it can be seen that the turnover of working capital and economic profitability has increased and decreased every year. Working capital turnover fluctuated from 2014 2.5 times to 1.8 times in 2015 and 1.3 times in 2016, in 2018 working capital turnover again increased from 1.3 times to 1.7 times but again decreased in 2020 to 1.4 times. Meanwhile, economic profitability in 2014 was the most optimal achievement at 10.69% and the lowest economic profitability in 2017 was -0.82%.

2. Statistic analysis

In processing data using simple linear regression, several stages are used to find the effect of working capital turnover (X) as an independent variable on economic profitability (Y) as the dependent variable which we can know the results of the regression equation. The following table of calculation results was obtained by the author using spss 16.

Table 4 Simple Linear Regression Test Analysis Results

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8,317	2.297		-3.621	.015
	Working Capital Turnover (X)	7.369	1.338	.927	5.506	.003

a. Dependent Variable: Economic Profitability ((Y)

Source: Data processed using spss 16

Based on table 4.2 above, the simple linear regression equation model used in this study is as follows:

$$Y = -8,317 + 7,369 X$$

With the linear regression equation above, it can be explained that:

1. The value of a (constant) is economic profitability =  $-8,317$   
That is the value of working capital turnover (X) = 0 then the value of economic profitability (Y) is  $-8,317$ . The constant value is negative, meaning that if the working capital turnover is constant or equal to zero, the economic profitability will also decrease. Economic profitability was reduced by 8.317 when there was no working capital turnover.
2. X value = 7.369  
This means that if the working capital turnover variable (X) increases by 1%, then economic profitability (Y) also increases by 7.369%, and vice versa if the independent variable working capital turnover decreases by 1%, the dependent variable of economic profitability also decreases by 7.369%.
3. Hypothesis testing

Table 5 t-test results

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8,317	2.297		-3.621	.015
	Working Capital Turnover (X)	7.369	1.338	.927	5.506	.003

a. Dependent Variable: Economic Profitability (Y)

Source: Data processed using spss 16

Based on the t-test table above, it can be obtained a significant value of t for working capital turnover (X) of 0.003. Here are the results of the comparison of t count with the t table:

$$t \text{ count} = 5.506$$

$$t \text{ table} = 2.571$$

Because  $t_{\text{count}} > t_{\text{table}}$  i.e.  $5.506 > 2.571$  with a *P value* smaller than the probability value ( $0.003 < 0.05$ ), then  $H_0$  is rejected, and  $H_a$  is accepted, which means that there is a significant effect on working capital turnover (X) on economic profitability (Y) so that the alternative hypothesis ( $H_a$ ) is proven.

Table 6 Correlation and Determination Coefficient Results

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. An error of the Estimate
1	.927 <sup>a</sup>	.858	.830	1.37422

a. Predictors: (Constant), Working Capital Turnover (X)

Source: Data processed using spss 16

The table above is a table of correlation coefficients (R) and determination ( $R^2$ ). The table explains that the correlation coefficient is 0.927, meaning that the relationship between working capital turnover (X) and economic profitability (Y) is very strong because it is in the range of 0.80 – 1,000 based on *Pearson's provisions*. While the value of the coefficient of determination ( $R^2$ ) is 0.858. This means that working capital turnover (X) affects economic profitability (Y) by 85.8 % and the remaining 14.2% is influenced by other variables not included in the study.

#### 4. Discussion of Research Issues

This study aims to provide valid evidence regarding the influence and relationship between working capital turnover on economic profitability at PT. Vale Indonesia, Tbk on the Indonesia Stock Exchange for the period 2014 - 2020.

The results show the regression equation is  $Y = -8,317 + 7.369 X$ . With  $t_{count} > t_{table}$  ( $5.506 > 2.571$ ) and  $P\ value$  is smaller than the probability value ( $0.003 < 0.05$ ) or  $H_0$  is rejected and  $H_a$  is accepted means there is a significant effect of working capital turnover (X) on economic profitability (Y) so that the working hypothesis ( $H_a$ ) is proven. The R-value of 0.927 means that the relationship between working capital turnover and economic profitability is very strong. While the value of  $R^2$  is 0.858 that the working capital turnover has an effect on economic profitability by 85.8 % and the remaining 14.2% is influenced by other variables not examined.

Based on the results of the research that has been done, the totality of the results of this study shows that there is a significant effect of working capital turnover on economic profitability at PT. Vale Indonesia, Tbk. If the working capital turnover is good, it will affect the optimal profit. In other words, the use of working capital with a good and optimal turnover rate will have an impact on the optimal and low level of economic profitability as well.

The results of this study agree with previous research conducted by Rusman (2016) which states that working capital turnover has a significant influence on economic profitability. The results of this study also have similarities with previous research by Ghaida Nurul (2017) which states that working capital turnover has a significant effect on economic profitability, but the difference is that previous studies using multiple linear regression with the results of cash turnover and inventory turnover have no significant effect on economic profitability. while the current study uses simple linear regression with significant results. This study contradicts the research conducted by Nyoman Budiasa (2014) which says that working capital turnover has no significant effect on economic profitability.

The results of this study provide an illustration that proves that working capital turnover plays an important role in achieving economic profit or profitability at PT. Vale Indonesia Tbk. This can be a consideration and reference in operational activities for PT. Vale Indonesia Tbk that better working capital turnover in a period can guarantee the acquisition of optimal economic profitability because the results of this study indicate that there is a significant effect of working capital turnover on economic profitability.

## CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that there is an effect of working capital turnover on economic profitability with a very strong relationship and the nature of a positive relationship at PT. Vale Indonesia, Tbk period 2014-2020. This can be shown from the results of the t-test, namely  $t_{arithmetic} > t_{table}$  which is  $5,497 > 2,571$ , then  $H_0$  is rejected, and  $H_a$  is accepted, which means that there is a significant effect on working capital turnover (X) on economic profitability (Y). Suggestions for companies are companies need to maintain and increase their working capital turnover in order to achieve a better, optimal, and low level of economic profitability. In addition, companies are expected to be able to consistently control working capital turnover and economic profitability so that they can evaluate policies in the next period. Suggestions for further researchers who are interested in research in connection with this thesis, so that researchers examine more variables related to working capital turnover and economic profitability or include other factors that can affect the dependent variable so that the research results are more complete, integral, and better.

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