

# Effect of Working Capital Management on Profitability of Manufacturing Companies Listed on the IDX

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**Keywords:** Working Capital Management, Profitability, Gross Operating Income.

**Abstract:** This study aims to determine the effect of WCM on the profitability of Indonesia's listed manufacturing firms for 2015-2019. This study has one dependent variable, namely profitability which is measured by GOI and has an independent variable, namely WCM, which is measured by ICP, RCP, APP, and CCC. This study also has two control variables, firm size and leverage. The sampling technique used the purposive sampling method. Data is obtained from the annual reports of 86 companies. The data analysis technique is panel data regression analysis with the E-views 9 software. The results of the study found that ICP, RCP, APP, and CCC have a significant effect on profitability.

## 1 INTRODUCTION

Along with the times and technological developments, every year, manufacturing companies also experience effects and improvements. One of the things that make economic growth also increases is caused by the role of the manufacturing company itself (Syafitri & Adi Wibowo, 2016). Along with the increase in company growth, competition between companies is also getting tighter.

Every company certainly needs funds, to be able to finance all the company's needs, both for operational activities or for long-term investment. This fund is known as working capital. If you run out of working capital, the company will certainly not be able to run well. Setyanto & Permatasari (2014), in their research, states that Working Capital Management (WCM) includes Inventory, Accounts Receivables, Accounts Payables, and Cash Conversion Cycle.

WCM needs to be appropriately managed, because WCM is a financial component required to carry out company activities or operations based on plans and policies that have been set by it. Mistakes in managing WCM can slow down the company's performance and even cause the company to stop operating and make its business fail.

CCC is defined as the cash flow starting from cash disbursement to cashback (receivables paid) and can be calculated by adding the RCP and ICP then deducting the APP (Mamduh, 2008). Inventory

Conversion Period (ICP) is the time for a company to process the inventory until the products can be sold. This ICP needs to be considered because to determine how long it takes the company to spend stock in its production process.

Receivables Conversion Period (RCP) is the time for the company to collect its receivables into cash. Receivables occur when the sale is made, but the company has not yet received it as cash. Thus, the use of accounts receivable is expected to increase profits and sales.

Accounts Payable Period (APP) is the time for the company to purchase the inventories, labor, and payments (Brigham & Houston, 2006). If debt payments are delayed, the additional capital owned can be used for other purposes. The level of debt, which is an element of liability for the company, is also an important thing that must be considered in financing and managing working capital. Apart from managing working capital properly, there are other important things that companies must do, namely maintaining and increasing profitability.

Profitability is the primary goal of every business, a service, trading, or manufacturing company. Every company must maintain its profitability properly so that investors are interested in investing because investors will usually see and analyze the company's profitability first before deciding to invest. In Indonesia, the contribution of the manufacturing sector plays a significant role in its economic growth. Researchers hope that analyzing the effect of WCM

will provide an overview and suggestions for the company to managing working capital.

## 2 THEORETICAL STUDY

### 2.1 Pecking Order Theory

Mayers & Majluf (1984) explained that in this theory, companies tend to use minimal risk funding sources. This theory also suggests that in managing to fund, companies will tend to choose internal financing first. The use of external funds determined if internal financing is insufficient.

### 2.2 Agency Theory

Jensen & Meckling (1976) explained that agency theory is an agreement in which a principal gives orders to the agent and is entrusted with making the right decision for the principal. If both of them have the same goals in increasing the firm valuation, then it is believed that the agent has acted in the principal's interests.

### 2.3 Cash Conversion Cycle Theory

Richards & Laughlin (1980) explain how firms can ensure short CCC to reduce the implications of poor working capital management. Thus, it measures the time between purchasing a company's inventory and receiving cash from its accounts receivable.

### 2.4 Literature Review

Based on previous research, Jin-Yap (2017) examined the effect of WCM on profitability in companies in Vietnam. Independent variables use WCM, which is proxied by ICP, RCP, APP, and CCC. FS, sales growth, and debt were used as control variables. Meanwhile, profitability is proxied through GOI (Gross Operating Income). The results show that ICP, ARP, APP, and CCC have a significant effect on profitability.

Ng, Ye, Ong, & Teh (2017) examined the effect of WCM. Independent variables use WCM, which is proxied by ICP, RCP, APP, and CCC. GOI is used as the dependent variable. The results show that ICP, ARP, APP, and CCC have a significant effect on profitability.

Le (2018) examines the effect of WCM on firm value, profitability, and risk. It uses NWC and CCC as independent variables. ROI is used as the dependent

variable. As a result, there is a negative relationship between NWC and firm value, profitability, and risk. The results of this study suggest that in managing working capital, managers must make objective considerations for profitability and risk control.

Kwatiah & Asiamah (2020) examined the effect of WCM on manufacturing companies in Ghana. WCM is proxied through ICP, RCP, APP, and CCC as independent variables. The control variables are Current Ratio, Current Assets, Firm Size, and Leverage. Meanwhile, the dependent variables are ROA and ROE. The results show that ICP, ARP, APP, CCC, Current Ratio, Current Assets, and Firm Size have a positive effect on ROA and ROE. Meanwhile, leverage has a negative impact on ROA and ROE.

### 2.5 Hypothesis Development

#### 2.5.1 Effect of Inventory Conversion Period on Profitability

ICP is the period used to process raw material until the product is finished and can be sold. The longer the ICP, the costs will be increase the company's operational costs. If the company's operating costs are high, it will reduce profitability. Therefore, to reduce costs arising from excess inventory, a low ICP level is needed (Brigham & Houston, 2006).

**H1: Inventory Conversion Period has a significant effect on profitability**

#### 2.5.2 Effect of Receivable Collection Period on Profitability

RCP is the time a company takes to convert receivables into cash. Receivables arise because of a sale, but the company has not yet received it as cash. So that the use of receivables is expected to increase profits, but there are other risks arise in the form of unpaid receivables. RCP is calculated by dividing the number of receivables by the number of sales and then multiplying by 365 days (Deloof, 2003).

**H2: Receivable Collection Period has a significant effect on profitability**

#### 2.5.3 Effect of Accounts Payable Period on Profitability

APP calculates the number of days it will take to pay its suppliers. It is calculated by dividing the accounts payable by the cost of sales, and then multiplying by

365 days (DeLoof, 2003). The results of previous research (Chowdhury, Alam, Sultana, & Hamid, 2018) explain that APP has a significant effect on profitability.

**H3: Accounts Payable Period has a significant effect on profitability**

**2.5.4 Effect of Cash Conversion Cycle on Profitability**

CCC is a calculation to determine the period when the company makes payments and receives cash. Increased profit can be obtained if the company shortens the conversion cycle.

**H4: Cash Conversion Cycle has a significant effect on profitability**

**H5: Inventory Conversion Period, Receivable Collection Period, Accounts Payable Period, and Cash Conversion Cycle is having a simultan impact on profitability**

The research model can be seen in Figure 1:

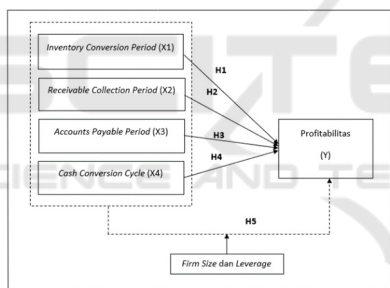


Figure 1: Research Model.

**3 RESEARCH METHOD**

This study uses a quantitative approach which is a type of structured, systematic, and planned research aimed at proving how the influence between the dependent variable and the independent variable is. The independent variable used is the working capital management is represented by the ICP, RCP, APP, and CCC. The dependent variable used is profitability which is measured by GOI. The operational variables and indicators can be seen in table 1:

Table 1: Operational variables and indicator.

Variable	Indicator
<b>Dependent Variable</b>	
GOI	$= \frac{\text{Sales} - \text{Cost of Sales}}{\text{Total Assets}}$
<b>Independent Variable</b>	
ICP	$= \frac{\text{Inventory}}{\text{Cost of Sales}} \times 365$
RCP	$= \frac{\text{Accounts Receivable}}{\text{Sales}} \times 365$
APP	$= \frac{\text{Accounts Payable}}{\text{Cost of Sales}} \times 365$
CCC	$= \text{ICP} + \text{RCP} - \text{APP}$
<b>Control Variables</b>	
FS	$= \text{Ln Total Sales}$
LEV	$= \frac{\text{Long Term Debt}}{\text{Total Assets}}$

The object in this study is the financial statements of manufacturing companies for 2015-2019 listed on the IDX. The data analysis technique used panel data regression analysis using E-Views 9 software. Descriptive statistical analysis will be used in this study. Determination of the estimation model using the Chow test and Hausman test. The classical assumption test were used in this study is the multicollinearity and heteroscedasticity test.

**4 RESULT**

The population data used in this study are manufacturing companies listed on the IDX from 2015 to 2019, with 86 companies. This amount is reduced by the criteria of the research sample. The total sample for 2015-2019 that meets the requirements is 86 companies or 430 data samples.

**4.1 Descriptive Statistical Analysis**

Table 2: Descriptive statistical table.

Variable	Mean	Max	Min	Std.Dev
GOI	24.98030	94.40000	-4.71000	17.50968
ICP	114.5353	387.8100	12.12000	71.07829
RCP	67.93681	300.3500	9.200000	4470.256
APP	47.80144	182.2100	-4.71000	28.65895
CCC	134.6705	520.3600	12.12000	91.93375
FS	14.43579	18.49000	9.200000	1.479053
LEV	15.41570	212.8600	0.66000	18.08306

## 4.2 Classic Assumption Test

### 4.2.1 Multicollinearity Test

Table 3: Multicollinearity test.

	ICP	RCP	APP	CCC	FS	LEV
ICP	1,0000	0,2564	0,0773	0,7522	-0,5070	-0,0317
RCP	0,2564	1,0000	0,2865	0,4911	-0,3181	-0,0985
APP	0,0773	0,2865	1,0000	-0,1329	0,0016	0,1307
CCC	0,7522	0,4911	-0,1329	1,0000	-0,5019	-0,1308
FS	-0,5070	-0,3181	0,0016	-0,5019	1,0000	0,0253
LEV	-0,0317	-0,0985	0,1307	-0,1308	0,0253	1,0000

The value of the correlation coefficient between variables has a value below 0.8. This shows that the data in this study does not have multicollinearity problems.

### 4.2.2 Heteroscedasticity Test

Table 4: Heteroscedasticity test.

F-Statistic	1.7072	Prob F. (3.71)	0.1177
Obs*R-squared	10.1664	Prob. Chi-Square(3)	0.1178
Scaled explained SS	14.0872	Prob. Chi-Square(3)	0.0287

Heteroscedasticity test in this study using the Glejser test. Obs \*R-Squared is 10.1664, and the probability is 0.1178, which is > of (5%). This indicates that the data does not have heteroscedasticity problems.

## 4.3 Model Selection

### 4.3.1 Chow Test

This test aims to see whether the FEM or CEM.

Table 5: Chow Test.

Effect Test	Statistic	d.f.	Prob
Cross-section F	37.84328	(85,338)	0.00000
Cross-Section Chi-Square	1011.7788	85	0.00000

Prob. Cross-section F is greater than 5% alpha (0.000 > 0.05), which means that the best estimation model is Fix Effect Model.

### 4.3.2 Hausman Test

This test aims to determine the suitable model between FEM or REM.

Table 6: Hausman Test.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.595621	6	0.0499

Based on table 6, the cross-section value is smaller than alpha 5% (0.0499 < 0.05), which means that the best estimation model is the FEM, because the results of the test both show that the correct model is FEM, so it is no need to do the next test, that is the Lagrange multiplier test.

## 4.4 Panel Data Regression Analysis

Table 7: Fixed Effect Model.

Variable	Coefficient	t-statistic	Prob.
C	-15,15280	-0,642977	0,5207
ICP	-119,7704	-2,097767	0,0367
RCP	-119,7177	-2,096778	0,0368
APP	119,6675	2,095988	0,0368
CCC	119,6884	2,096265	0,0368
FS	3,627146	2,250003	0,0251
LEV	0,011572	0,384364	0,7010
R-Squared			0.907
Adjusted R-Squared			0.8822
Prob (F-Statistic)			0.00000
N			75
Model Result			Fixed

The following equation can be obtained:  

$$GOIt = -15,1528 - 119,7704ICPt - 119,7177RCPt + 119,6675APPt + 119,6884CCCt + 3,6271FSt + 0,0115LEVt$$

### 4.5 Coefficient of Determination

The Adjusted R-squared value in table 7 shows a value of 0.8822. The meaning of the dependent variable in the form of GOI is influenced by independent variables and control variables (ICP, RCP, APP, CCC, FS, and LEV) by 88% (0.8822).

## 4.6 F Test

Results of the F test with the dependent variable GOI can be shown in table 7. The probability value (F-statistic) is 0.000003. The value is smaller than the alpha level (5%). It means that ICP, RCP, APP, and CCC simultaneously affect on GOI.

## 4.7 Data Analysis

The following is a summary table of test results from this study:

Table 8: Summary of test result

Hypothesis	Result
H1: Inventory Conversion Period has a significant effect on profitability	Supported
H2: Receivable Collection Period has a significant effect on profitability	Supported
H3: Accounts Payable Period has a significant effect on profitability	Supported
H4: Cash Conversion Cycle has a significant effect on profitability	Supported
H5: Inventory Conversion Period, Receivable Collection Period, Accounts Payable Period, dan Cash Conversion Cycle has simultaneously effect on profitability	Supported

### 4.7.1 Effect of Inventory Conversion Period on Profitability

The statistical tests show that the ICP has a significant effect on firm's profit. The coefficient is -119.7704, which means that the ICP negatively affects profitability. Jin-Yap (2017) and Berg (2016) supported these studies. This indicates that the longer the ICP, the company's profitability will decrease, because the longer the period required to convert inventory to cash, the longer the company receives money which will be used as working capital funds. Where if the ICP is low, it will increase profitability. A low ICP indicates that the company carries out the process of producing and selling goods for a short period so that there are no idle items in the warehouse.

### 4.7.2 Effect of Receivable Collection Period on Profitability

The statistical tests show that RCP has a significant affects profitability. The coefficient is -119.7177, which means that RCP negatively effect the profitability. Jin-Yap (2017) and Berg (2016) explain that improving the efficiency of RCP can increase a firm's profit. Berg (2016) examines the effect of WCM on companies in Norway. The independent variable uses RCP. That shows the longer the period for receiving accounts receivable, the company's profitability will decrease. The longer it takes to convert receivables into cash, it means that the more likely the supplier company will not pay its accounts payable.

### 4.7.3 Effect of Accounts Payable Period on Profitability

The statistical tests show that APP has a significant effect on profitability. The coefficient value is 119.6675. The results of this study are supported by research by Ng, Ye, Ong, & Teh, (2017) and Afrifa, Tauringana, & Tingbani (2015). Therefore, the company is expected to know the effective WCM, especially determining the debt deferral period. If the debt deferral period can be appropriately managed, then the company can maximize the profit earned. However, the deferral period is relative, depending on the type of industry of each company.

### 4.7.4 Effect of Cash Conversion Cycle on Profitability

The statistical tests show that the CCC has a significant effect on profitability. The coefficient value is 119.6675, which means that the CCC has a positive impact. The results of this study are supported by Ng, Ye, Ong, & Teh, (2017) and Afrifa, Tauringana, & Tingbani (2015). The findings regarding CCC contradict with studies by Jin-Yap (2017) and Berg (2016). According to Deloof (2003), this difference is also due to the CCC, which is influenced by several factors such as the ICP, RCP, and APP. Thus, there is a difference between the size of the CCC of each company.

## 5 CONCLUSION

The study has explored the relationship between WCM and the profitability of Indonesian manufacturing firms. It finds that ICP, RCP, APP,

and CCC have a significant effect on a firm's profit. This study suggests that ICP and RCP can increase firms' profitability by improving the efficiency of collecting account receivables and managing the inventories. This study also suggests that extending the APP may be regarded as an attractive source of financing. Firms can reserve working capital by delaying the payment to suppliers for increased profitability, but this must be managed properly because if the company delays debt for too long, it will generate interest.

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