

# The Determinant of Working Capital Management of Manufacturing Companies

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**Abstract.** Working capital is directly related to the operational activities of the company to produce goods. To be able to properly manage its working capital, the company should determine what factors that can affect working capital. Actually, there are many factors that affect working capital management but the factors that used in this study are firm size, leverage, firm growth, cash flow, profitability, capital expenditure, and GDP. Meanwhile, working capital management is reflected by the cash conversion cycle. By taking samples at manufacturing companies listed in Indonesia Stock Exchange period of 2010 - 2014, it is found that there are a significant effects of firm size, firm growth, cash flow, profitability, and GDP toward working capital. While the leverage and capital expenditure shows insignificant effect.

**Keywords:** working capital, cash conversion cycle, firm growth, capital expenditure, GDP

## Introduction

Companies have always had a goal to make profits from the various aspects of their business, either producing goods or provides services. In order to produce goods or provide services, the companies need funding. The funding that is spent by companies to maintain daily operations or meeting daily needs is called working capital. According to Eljelly (2004), the management of working capital is both the planning and the handling of current assets and current liabilities to reduce the default risk or the chance in which companies or individuals will be unable to make the required payments on their debt obligations at a certain period of time, while on the other side it is essential to avoid investment on excessive assets. When a company experience operational difficulties or, in other words, cannot maintain its business properly, it may lead to bankruptcy (Smith, 1973). In the United States, a department store filed for bankruptcy after experiencing cash flow deficit in its operational activity for eight years in the past 10 years (Largay and

Stickney, 1980).

The working capital management can be viewed from Cash Conversion Cycle or CCC. CCC is a ratio that is used to measure the capability of a company in converting the existing cash to inventory or supply that can be resold or converted back to cash. CCC is usually used as a reference for the company's performance by comparing it with the previous year's CCC or other similar companies. Companies with shorter CCC time will be able to collect cash needed for daily operations without needing any external fundings, which means there is no additional cost for loans. Furthermore, the company's profit will increase. The capital is closely related to leverage. In business activities, companies require capital including working capital. Large-scale companies will experience delay on productions while having insufficient capital. Therefore, companies will generally need leverage to support their business. In addition, larger companies will likely have larger scale of operations. Moreover, when a company is already large and capable of

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expanding, its business will definitely need even bigger working capital. This is the reason of why companies also need to manage working capital during business expansion.

Companies that attempt to expand their business activity, in general, have a decent level of business growth or firm's growth. The growth of a company can be seen from the sales increase in comparison to the previous year so that it may generate more profit in the current year (Mansoori and Muhammad, 2012). The company's growth cannot be separated from the company's profitability.

That is, the company's profit may trigger the company's growth. The company that continuously growing will have larger company size. The company size is not only based on assets but also on sales level. The higher level of sales may generate more income for the company. With that, the cash position will also be increased. Or else if it is not in cash, it will surely influence the position of accounts receivable (AR). Both cash and accounts receivable (AR) are the components of working capital, in addition to debts and supply (Sugiono, 2009).

Since cash is a part of current assets, its management should also be considered. In order to observe the working capital management, where working capital is related to company's operations, it is very important to consider cash that is spent or obtained from operations. With the availability of cash, which is the most current asset among other instruments of current assets, a company will not only be able to finance operations, but also experience the ease in purchasing new assets or improving existing assets. Usually, a company will annually budget fixed assets with the lifespan of more than a year. The budget for fixed assets on a company is often called capital expenditure (Carter, 2009). The capital expenditure may influence a company's working capital. Companies with decent financial condition may not have to deal with this, whereas companies with financial constraint will have to experience the competition between working capital and capital expenditure needs (Fazzari and Petersen in Mansoori and Muhammad, 2012). The working capital is not merely related to the company's internal condition. Instead, it is also related to the company's external condition. For example, in terms of the company's sales. The company's sales may experience an increase driven by the rising demand from the society. The soaring demand

is also supported by strong purchasing power, which means the economy growth in the nation is superior.

The economic development of a country is generally measured by the Gross Domestic Product (GDP). The high GDP indicates the country's decent economic development annually or quarterly. Many research papers on the working capital management were conducted in the past. Some scholars who conducted these papers include Mansoori and Muhammad (2012), Appuhami (2008), Mohamad and Elias (2013), Zariyawati et.al. (2010), as well as Chiou and Cheng (2006). Appuhami (2008) discussed the influence of capital expenditure towards the working capital management, which is measured by using working capital requirement (WCR) and *net liquidity balance* (NLB). Meanwhile, Mansoori and Muhammad (2012) conducted a research on the factors that influence the working capital management with a case study of a company in Singapore. They use cash conversion cycle (CCC) to measure the working capital management. Other research on working capital management is conducted by Mohamad and Elias (2013) by using CCC and WCR to measure the working capital management of companies listed on the Malaysian Stock Exchange.

Since the working capital is important for a company's performance, the author would like to examine the factors that may influence the working capital management in companies in Indonesia, namely company size, leverage, the company's growth, cash flow, profitability, capital expenditure, and gross domestic product (GDP) as previously done by Mansoori and Muhammad (2012) in Singapore. In addition, with a number of capital investments from both foreign and local investors to the manufacturing sector in the past five years, the author would like to specifically examine the working capital management in the manufacturing companies listed on the Indonesian Stock Exchange (BEI) in the past five years.

Based on the explanation above, it can be determined that the purpose of this research paper is to analyse whether there is an influence from company size, leverage, the company's growth, cash flow, profitability, capital expenditure, and gross domestic product (GDP) toward working capital management that is measured with cash conversion cycle on manufacturing companies listed on the Indonesian Stock Exchange in

the 2010-2014 period.

## **The Factors of Working Capital Management**

The working capital may be reflected through the composition of current assets and current liabilities on the balance sheet. While it may seem simple, if it is not managed properly, it may worsen the level of liquidity that may put a company into bankruptcy (Mardiyanto, 2009). The main purpose of the working capital management is to ensure that the company possesses sufficient cash flow in order to continue its operations by minimizing the risk of the inability to pay its short-term debts (Mansoori and Muhammad, 2012). Decent working capital management means better maintenance of the level of liquidity so that the company possesses supply, and able to fulfill its short-term needs, as well as providing accounts receivable (AR) to customers (Mardiyanto, 2009). The working capital management is largely reflected in cash conversion cycle (CCC). CCC focuses on the length of the period needed by companies to provide payment and when companies receive cash inflow (Zariyawati et. al., 2010). The shorter CCC period is better because it means the company has a good liquidity or, in other words, the company can easily converts its short-term investment to current assets and cash.

In this research paper, there are several factors that may influence the working capital, namely company size, leverage, the company's growth, cash flow, profitability, capital expenditure, and GDP. The company size is viewed from the amount of assets the company owns. There is no fixed measurements to determine whether a company is big, medium, or small. Meanwhile, the company's growth is measured with various ways including observing the company's sales, profits, and capital. Larger companies would need less funding in terms of its working capital investment in comparison to smaller companies. This is due to the fact that larger companies will possess fewer asymmetry information and require less cost in order to obtain external funding (Mansoori and Muhammad, 2012).

Leverage is generally used to illustrate a company's capability to capitalize its current assets or fundings with fixed expenses to increase the company's income level (Syamsuddin, 2004). That is, the leverage is the pull a company needs to support their

businesses. Operating cash flow is the profit obtained by a company before interests minus taxes plus depreciation (Ross, Westerfield, and Jaffe, 2010). When a company has a negative operating cash flow in long period of time, it means the company does not possess sufficient cash flow to fund its operations. Companies with higher operational cash flow will definitely have more efficient working capital management (Chiou, et. al., 2006).

The profitability ratio is the indicator of financial health for every company, which is the level of the measurement of yield to assets or equity (Bodie, Kane, and Marcus, 2014). Among the measurements of profitability ratio are *Return on Assets* (ROA) and *Return on Equity* (ROE).

Capital expenditure is the allotted investment that is expected to generate cash inflow in the future, which is why good preparation is necessary for planning capital expenditure (Sapiro, 2005). Meanwhile, GDP can be defined as the value of goods and services that is produced by a country in one year by using the production factors of its citizens (Sukirno, 2013). The economy measurement may be based on the income and expenditures toward goods and services. Normally, the time period is one year.

## **Methodology**

This research paper uses multiple linear regression methods. The model of this research paper may be formulated as follows

$$4\_LEV + \beta_3\_SIZE + \beta_2\_CEX + \beta_1\_LEV + 0\_CCC = \beta_6\_GDP + \beta_5\_IND + \beta_7\_CFL + \beta_6\_ROA + \beta_5\_GROWTH + \beta_7$$

(Mansoori dan Muhammad, 2012)

Notes:

CCC : cash conversion cycle

CEX : Capital expenditures to sales

SIZE : company's size or firm size

LEV : leverage

GROWTH: company's growth or firm growth

ROA : return on asset

CFL : operation cash flow to sales

GDP : gross domestic products

IND : variable dummy industry effect

$\beta_1, \beta_2, \beta_3, \dots, \beta_7$  : regression coefficient of each independent variables.

E : term of error

## **Descriptive Statistics**

Descriptive statistics is used to explain the characteristics of the research data such as the maximum value, the minimum, mean,

**Table 1**  
**Descriptive Statistics**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Median</b>	<b>Mode</b>
CCC	564	0,69	54,64	10,0372	4,96530	86,99362	-114,7636a
Firm Size	564	5,0438	14,2450	10,19888	2,3030631	11,39323	6,2805a
Leverage	564	0,0000	4,3015	0,542181	0,4823388	0,480757	0
Firm Growth	564	-0,9999	1,9900	0,108249	0,2250921	0,106601	,0968a
Cash Flow	564	-103,3433	72,3409	6,579374	13,2467323	5,554783	0
Profitability	564	-0,7558	0,6572	0,062659	0,1122471	0,04124	-,0516a
Capital Expenditures	564	0,0144	6,9397	,579814	,6534391	0,374094	,4506a
GDP	564	0,0052	0,0065	,005959	,0004412	0,0061	0,0062

standard deviation, median, and mode with statistical approach. The descriptive statistics in this research paper is summarized as Table 1.

Based on the Table 1, it can be seen that the CCC variable has the average value of 10,0372, which means that, in average, manufacturing companies need 1,003 days to convert their cash into inventory and then convert it back into cash. The minimum CCC, according to the research data, belongs to Voksel Electric Tbk, which in 2013 experienced 69 days of CCC time. Meanwhile, the maximum CCC of 5,464 days goes to Polychem Indonesia Tbk in 2013.

### **The HRM Practices and HC Dimensions**

The data that is used in this research paper is the panel data, which is the mixture of cross-section and time series. In order to determine the best regression model in the research model, the author conducted estimation for OLS, *Fixed Effect Model*, and *Random Effect Model*. Furthermore, the author conducted Chow examination (OLS vs *Fixed Effect Model*) and Hausman Examination (*Random Effect Model* vs *Fixed Effect Model*). Based on the Chow and Hausman examinations, the author concluded *Random Effect Model* as the best panel data examination model for this research model. The output from the estimation of the *Random Effect Model* from this research model is as Tabel 2.

Based on the examination results on the model regression above, it can be seen that the F examination value is at 10.57154

with the significance of 0.000005, where it is required that the significance is  $F < 0,05$  so that the hypothesis can be accepted. With that, it is concluded that these variables simultaneously influence dependent variables. This means if *firm size*, *leverage*, *firm growth*, *cash flow*, *profitability*, *capital expenditure*, and *GDP* experience increase at the same time, it will have an impact on the increase of CCC, and vice versa. With the presence of significance that is below 0.05, the regression model from this research paper can be accepted because the regression coefficient can be accepted.

In addition, from the adjusted  $R^2$  value, it can be seen that the independent variables in the regression model, namely *firm size*, *leverage*, *firm growth*, *cash flow*, *profitability*, *capital expenditure*, and *GDP* can explain the dependent variable, CCC, at 5.17 percent, while the rest is explained by other variables outside the model.

Meanwhile, from the results of the t-test examination (partial), p-value that is bigger than  $\alpha$  is discovered, namely *leverage* and *capital expenditure*. Meanwhile, the independent variables with p-value which smaller than alpha on the t-test examination results above, namely *firm growth* and *cash flow*, show significant results on level 1 percent, *GDP* and *profitability* that show significance level at 5 percent as well as *firm size* that has significance at 10 percent.

Based on the output results above, it is also can be noticed that each of independent variables like *firm growth*, *profitability*, and *cash flow* has negative direction but significantly influence working capital

**Table 2**  
**Random Effect Model**

Dependent Variable: CCC  
 Method: Panel EGLS (Cross-section random effects) Date: 06/16/15 Time: 23:16  
 Sample: 2010 2014  
 Periods included: 5  
 Cross-sections included: 117  
 Total panel (unbalanced) observations: 564  
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEVERAGE	0.673247	0.630226	1.068263	0.2859
FIRMGROWTH	-1.997535	0.768369	-2.599708	0.0096
FIRMSIZE	0.240552	0.128548	1.871296	0.0618
CASHFLOW	-0.072685	0.016684	-4.356548	0.0000
PROFITABILITY	5.417942	2.312600	2.342793	0.0195
CAPITALEXPENDITURES	0.418458	0.390756	1.070894	0.2847
GDP	886.9277	358.0791	2.476904	0.0135
C	2.016061	2.494889	0.808076	0.4194
Effects Specification				S.D. Rho
Cross-section random				3.236930 0.4383
Idiosyncratic random				3.664744 0.5617

### Weighted Statistics

R-squared	0.063497	Mean dependent var	4.591027
Adjusted R-squared	0.051707	S.D. dependent var	3.776818
S.E. of regression	3.676299	Sum squared resid	7514.435
F-statistic	5.385460	Durbin-Watson stat	1.858570
Prob(F-statistic)	0.000005		

### Unweighted Statistics

R-squared	0.040686	Mean dependent var	10.03724
Sum squared resid	13315.58	Durbin-Watson stat	1.108915

management reflected on CCC. Meanwhile, each of independent variables: *firm size*, *leverage*, *capital expenditure* and *GDP* has positive influence, but both *leverage* and *capital expenditure* do not have significance influence toward working capital management reflected on CCC.

### Conclusions

Based on the data analysis results and the discussions of this research paper, it can be concluded that *firm size*, *cash flow*, and *GDP* have significant and positive influence toward working capital management. Meanwhile, *firm growth* and *profitability* have negative and significant influence toward working capital

management. Both *leverage* and *capital expenditure* have positive influence but it is not significant or in other words the research paper cannot find the significant influence for both *leverage* and *capital expenditure* towards working capital management as reflected on CCC.

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