



## The Effect of Working Capital Management on Profitability and Business Risk in Indonesian Manufacturing Companies

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### Info Article

#### *History Article:*

Submitted: 30 Agustus 2020

Revised: 20 November 2020

Accepted: 11 January 2021

#### *Keywords:*

*Business Risk; Cash Conversion Cycle; Manufacturing Companies; Profitability; Working Capital Management*

### Abstract

Company policies related to working capital are very important to note, given the amount of working capital as a proportion of company assets. The financial manager must be able to maximize the use of working capital for the benefit of shareholders. This research aims to assess and analyze the effect of working capital management measured by the cash conversion cycle on profitability and risk in manufacturing companies in Indonesia. Data used are from financial statements of manufacturing companies listed on the Indonesia Stock Exchange and fulfill research requirements using with purposive sampling method amount to 81 companies from 2014 to 2018. The result of the study shows that the cash conversion cycle has a negative significant effect on the profitability and risk of the company.

## Pengaruh Manajemen Modal Kerja terhadap Profitabilitas dan Resiko Bisnis Perusahaan Manufaktur Indonesia

### Abstrak

*Kebijakan perusahaan mengenai modal kerja sangat penting untuk diperhatikan, mengingat besarnya modal kerja sebagai proporsi aset yang dimiliki perusahaan. Manajer keuangan perusahaan harus mampu memaksimalkan penggunaan modal kerja demi keuntungan pemegang saham. Penelitian ini bertujuan untuk menguji dan menganalisis pengaruh manajemen modal kerja yang diukur melalui siklus konversi kas terhadap profitabilitas dan risiko yang di hadapi perusahaan manufaktur di Indonesia. Data yang digunakan adalah laporan keuangan perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia dan pengambilan sampel dalam penelitian ini menggunakan metode purposive sampling sejumlah 81 perusahaan dalam jangka waktu 2014–2018. Hasil penelitian ini menunjukkan bahwa manajemen modal kerja yang diukur melalui siklus konversi kas berpengaruh negatif signifikan terhadap profitabilitas dan risiko perusahaan.*

How to Cite: Setiawan, R., & Sari, A. M. I. P. (2021). The Effect Of Working Capital Management on Profitability and Business Risk in Indonesian Manufacturing Companies. *Ekonomi Bisnis*, 26(1), 40-49

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ISSN

0853-7283 (print) 2528-0503 (online)

DOI: 10.17977/um042v26i1p40-49



The working capital management is reflected in the current asset and current loans of a company (Sudana, 2015). The corporate policy about working capital is important because it is a corporate asset. The corporate financial manager should maximize the use of the working capital for the sake of shareholders' benefits (Aktas, Croci, & Petmezas, 2015).

They must maintain the working capital level optimum so a company will be at risk and put in an insolvent situation (a condition in which a company has difficulties paying the debt due) (Syamsyuddin, 2016).

The working capital management of a company or corporation is measured from the cash conversion cycle. The cash conversion cycle refers to the disbursed cash period to purchase the raw material supply until the cash is collected from the sales of the finished goods.

The length of the cash conversion cycle determines the needed amount of corporate working capital. The supply, debt, and credit periods are the determining components of the corporate working capital (Sudana, 2015).

The corporate profitability ratio to measure the corporate capability to earn a profit is based on the corporate sources, such as assets, capital, and corporate sales. The cash conversion cycle is an important component for corporate financial managers because it significantly influences corporate profitability.

Literature works discuss working capital management determined that efficient management could improve corporate profitability. The applied working capital level of a company also influenced the profitability based on the supply, debt, and credit levels (Le, 2019).

A company with longer cash conversion earns decreased profit (Deloof, 2003).

The higher supply level of a company, longer credit, and shorter loan led to the increased corporate capital need. Thus, the cycle gets higher and decreases the corporate profitability.

It makes a company loses its opportunities to fund some high-value investment projects (Le, 2019). A company will experience higher storage costs. Thus, it indicates the company has difficulties selling the products and indicates the company has bad debt costs.

The *trade-off* between the encountered profitability and risk of a company appears from time to time. Smith (1980) found that working capital was important because it influenced corporate profitability and risk (Ban & Marti, 2012).

Literature works that discuss working capital management found that efficient management could decrease corporate risks. On the other hand, the added investment in working capital would decrease the liquidity risk. It means the company could meet the financial obligation due and pay the debt with the current assets (Le, 2019). The collateral investment as the working capital could decrease the corporate risk because the company has cash reserves (Aktas, Croci, & Petmezas, 2015).

Some experts explain the cash conversion cycle of a company has two opposite poles. The first one is - short cash conversion is excellent for corporate profitability. However, it could also encourage customers to pay with cash so the company may find the sale difficult. Customers prefer cash payment and it could improve the sale and the corporate earnings.

On the other hand, a longer cash conversion cycle provides advantages because it decreases the corporate risks. The weakness of this cycle is - it could lower the corporate profitability. Therefore, a company should consider working capital management to promote the activity operations.

Some previous researchers found the influence of working capital management on profitability and corporate risk. Le (2019) investigated companies listed in Vietnam Stock Exchange from 2007 until 2016. The author found the influence of working capital management on corporate valuations, profitability, and risks. The author found a significant negative correlation between *NWC*, New Working Capital, and corporate valuation, profitability, and risk. The author also found the importance of working capital for companies with lower working capital access. Working capital management is important when a company will expand its investment during the economic recovery.

Aktas et al (2015) investigated the companies listed in the United States Stock Exchange from 1982 until 2011. They found the influence of working capital toward corporate value. They also found a negative correlation between corporate value and the capital working excess, *NWC*, in companies with abnormally higher *NWC* in the United State of America's market. However, they also found a positive correlation in companies with lower *NWC*.

Garcia & Solano (2007) investigated small and medium corporations in Spain from 1996 until 2002. They examined the capital working management toward the corporate profitability. They found that corporate financial managers could create

corporate values by reducing the supply and the days of the debt. Besides that, the efforts to shorten the cash conversion cycle could also increase corporate profitability. Some of the researchers conducted a follow-up investigation in 2014. They found financial boundaries encountered by companies in Spain (Baños Garcia, & Solano, 2014) concerning the financial performance and capital performance used by companies.

Based on the background, this research aims to examine and analyze the working capital management influence measured through the cash conversion cycle toward the profitability and risk encountered by the manufacturing corporation in Indonesia. The proposed hypotheses in this research are:

**H1: The cash conversion cycle negatively influences corporate profitability.**

**H2: The cash conversion cycle negatively influences corporate profitability.**

This research used the manufacturing companies because the characteristics of the companies are having current assets and larger working capital investment amount. Thus, they must be managed properly.

## **METHOD**

This quantitative approach research used the measured data and analyzed the data with statistic procedure because the research contained scores. This approach is useful to measure the investigated variables and to provide a generalizable conclusion with *multiple regression* analysis.

The researchers began the analysis with classical assumption tests, such as autocorrelation, multicollinearity, and heteroscedasticity.

This research used secondary data obtained from BEI publications, such as manufacturing financial reports listed in IDX from 2014 until 2018. The researcher used the obtained data from IDX [www.idx.co.id](http://www.idx.co.id).

The researchers took the sample with *purposive sampling* with the following criteria.

1. The manufacturing company listed in IDX
  2. The financial report presented in Rupiah
  3. Companies with complete and required data for the investigation
1. The cash conversion cycle negatively influences corporate profitability.
  2. The cash conversion cycle negatively influences corporate profitability.

On the other hand, the arranged analysis model to determine the influence of cash conversion cycle toward profitability and corporate risk appears in the multiple linear regression equation. The equation is:

**Model 1**

$$ROA_{i,t} = \beta_0 + \beta_1 CCC_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 LEV_{i,t} + \varepsilon_{i,t}$$

**Model 2**

$$SD ROA_{i,t} = \beta_0 + \beta_1 CCC + \beta_2 GROWTH_{i,t} + \beta_3 LEV_{i,t} + \varepsilon_{i,t}$$

Remarks :

$ROA_{i,t}$  = the corporate profitability (i) year (t)

$SD ROA_{i,t}$  = the corporate risk (i) year (t)

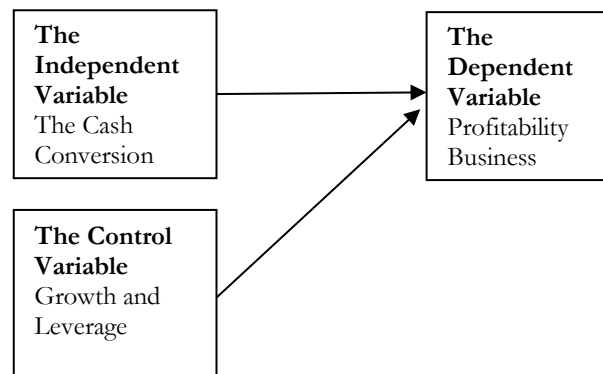
$CCC_{i,t}$  = the cash conversion cycle (i) year (t)

$GROWTH_{i,t}$  = the corporate sale growth level (i) year (t)

$LEV_{i,t}$  = the debt corporate level (i) year (t)

$\varepsilon_{i,t}$  = the corporate error (i) year (t)

The conceptual framework in the research is shown in Figure 1.



**Figure 1. The Research Conceptual Framework**

The applied operational definitions are:

The cash conversion cycle refers to activities to promote the corporate cash disbursements of the raw material purchase to produce goods and collect cash from the sales. It is measured with this formula:

$$CCC = \text{inventory conversion period} + \text{receivables collection period} - \text{account payable period}$$

*Return on asset* is the corporate capability to use all assets to earn a profit after being reduced with the tax burden. *Return on asset* becomes the corporate profitability. It is measured with the following formula:

$$ROA = \frac{\text{Earning after taxes}}{\text{Total assets}}$$

On the other hand, the researchers measured the corporate risks from the *Standard Deviation of ROA* that describes the projection of corporate profit uncertainty levels. The risk was measured with SD of ROA for each 3 year  $ROA_{t-2}$ ;  $ROA_{t-1}$ ;  $ROA_t$ .

*Leverage.* Companies that operate with their assets and financial resources will cause corporate burdens. The researchers measured leverage from the debt ratio that measured the financial proportions of the debt to pay the corporate assets. A higher debt ratio showed higher use of debt to pay the investment on the asset. The researchers measured the debt ratio with the following formula:

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

The sale growth indicates the increase of sales within certain periods. It shows the corporate achievement that the demands of products or services increase in the future. The growth levels are different based on the industrial and corporate sizes. The sale growth is calculated with the following formula.

$$\text{Growth Rate Of Sales} = \frac{(\text{Current Year Sales} - \text{Previous Year Sales})}{\text{Previous Yeas Sales}}$$

## RESULTS

After the data met the classical assumption test and were free from heteroscedasticity, multicollinearity, and autocorrelation, the researchers analyzed the data with multiple linear regression analysis. The researchers did the multiple linear analysis of the dependent variables, profitability and corporate risk, and the independent variable cash conversion cycle of the manufacturing companies with the

assistance of SPSS. Table 1 and Table 2 provide the results.

**Table 1. The Linear Regression Analysis Results of Model 1**

Model	Coefficient	t	Sig.
<b>Constant</b>	-0.401	-5.475	0.000
<b>CCC</b>	-0.009	-2.228	0.027
<b>GROWTH</b>	-0.009	0.854	0.394
<b>LEV</b>	-0.064	-4.895	0.000
<b>F Test</b>	17.675		0.000
<b>R Square</b>	0.206		

Source: The processed data (2020)

From Table 1 it can be seen that the multiple linear regression equation for ROA is:

$$ROA_{i,t} = -0.401 - 0.009CCC - 0.009GROWTH - 0.064LEV$$

The equation shows that the Cash Conversion Cycle (CCC) and the Leverage (LEVL) influences significantly the corporate profitability.

It is because the significant level is lesser than 0.05. On the other hand, the sale growth level (GROWTH) insignificantly influences corporate profitability.

The value of the determinant coefficient is 0.206. It shows the variables of CCC, LEV, and Growth influence the profitability or Return on Asset (ROA) with 20.6%. On the other hand, the remaining percentage, 79.4%, was from the unobserved variables.

The significant value of F is 0.000. It shows that CCC, LEV, and GROWTH simultaneously and significantly influence

corporate profitability. Thus, model 1 fairly predicts corporate profitability.

**Table 2. The Linear Regression Analysis Results of Model 2**

Model	Coefficient	t	Sig.
Constant	0.183	7.196	0.000
CCC	-0.012	-7.645	0.000
GROWTH	-0.002	-0.424	0.671
LEV	0.015	2.845	0.005
F test	22.394		0.000
R Square	0.208		

Source: The processed data (2020)

Table 2 shows the multiple linear regression equation is:

$$SDROA_{i,t} = 0.183 - 0.012CCC - 0.002GROWTH + 0.015LEV$$

The equation shows that the Cash Conversion Cycle (CCC) and the Leverage (LEVL) influences significantly the corporate profitability.

It is because the significant level is lesser than 0.05. On the other hand, the sale growth level (GROWTH) insignificantly influences the corporate business risk.

The value of the determinant coefficient is 0.208. It shows the variables of CCC, LEV, and Growth influence the corporate business risk or the Standard Deviation of ROA (SDROA), as the independent variable with 20.8%. On the other hand, the remaining percentage, 79.2%, was from the unobserved variables.

The significant value of F is 0.000. It shows that CCC, LEV, and GROWTH simultaneously and significantly influence the corporate business risk. Thus, model 2 fairly predicts the corporate business risk.

## DISCUSSION

### Model 1

#### The Cash Conversion Cycle Influence

The cash conversion cycle, CCC, negatively and significantly influenced the corporate profitability variable. (Deloof, 2003) also found the same result. The author found that a longer cash conversion cycle decreased the corporate profit. Kaushik & Chauhan (2019) also found the same result. The authors examined the research hypothesis and proved the cash conversion cycle, with *net trade cycle* as the proxy, negatively and significantly influenced the best corporate financial performances in India, listed in BSE 500 index.

The results also confirmed the findings in the same industrial field in Indonesia from 2008 until 2011 (Martha & Januarti, 2013), the period from 2014-2016 (Rahmantika & Juliarto, 2020), and the period of 2013-2018 (Nugroho, 2019). The results also confirmed the other authors' findings, such as in other industries outside of manufacturing industries. They were the miscellaneous industry (Wiono, 2017) and the cement industries in Indonesia (Susilawati & Supriadi, 2017).

A higher cash conversion cycle indicated the required time of a company to make the debt into cash and the supply into cash got longer. If it was observed from the speed of the supply conversion into cash, based on the corporate fee, the conversion speed cannot suppress the storing and storage costs. On the other hand, a longer time to make the supply into cash indicated the companies could not promote excellent sales. Therefore, a higher conversion cash cycle decreased the profitability.

The solution is efficient management to improve the corporate profitability with working capital levels applied by the companies. It is important because the

supply level, debt, and loan influenced corporate profitability (Le, 2019).

### **The Influence of Sales Growth Level**

The sales growth level, GROWTH, negatively and insignificantly influenced the corporate profitability. (Madyan, Rahmaddian, & Firdausi, 2019) also found the same result.

They found that companies with high sale levels required higher funds or cash to pay the increased operation because the companies would struggle to increase the corporate sales. Therefore, the sale growth did not influence the profitability in this research. It was because the additional costs and asset growth followed the sale growth.

The growth of fee and asset investment was observable in each company's financial report. Once the corporate sale increased, the burden on the capital expenditure would also increase. Thus, it decreased corporate profitability.

### **The Leverage Level**

The leverage or debt showed negative and significant results toward the corporate profitability. It showed that the correlation of the debt ratio with the decreased corporate profitability.

The results were in line with Le (2019). The author found a negative correlation between leverage and corporate profitability in Vietnam. Rahman & Nasr (2007) in Pakistan and Sathyamoorthi & Wally-Dima in Bostwana also found the same results in the same research topics.

Their findings confirmed the study of Astuti, Retnowati & Rosyid (2015) in Indonesia. The authors found that the long-term debt to asset ratio negatively and significantly influenced the corporate profitability of 100 best companies in Indonesia based on Fortune magazine version, from 2010-2012. However, long-

term debt only had a negative influence on profitability. Debt to asset ratio, the combination of the long-debt term and short-debt term of companies, and the debt to equity positively and significantly influenced the corporate profitability of 100 best companies in Indonesia from 2010 until 2012.

Companies that used the assets and financial resources to operate had a corporate debt that decreased the corporate profitability, especially with long-term debt funding. It was because the long-term debt was more expensive due to its *flotation cost* and the covenant regulations (Astuti, Retnowati & Rosyid, 2015). Thus, it made the managerial decision not efficient and decreased the corporate profitability.

Contrary to long-term debt, short-term debt is cheaper and can be immediately settled. Thus, the influence on the profitability was positive and significant (Astuti, Retnowati & Rosyid, 2015). The authors found that the average 100 best companies in Indonesia, based on Fortune's version, used their 41.82% structured capital from the debt that consisted of 18.64% long-term debt and 23.18% short-term debt. They found a positive and significant influence of the debt to equity ratio on profitability. The results were in line with Azlima (2009). The author found that structured capital by using debt could positively and significantly increase corporate profitability.

The findings showed that managers must be aware to use the debt in their structured capital. It is important because when managers falsely select the debt offering from the creditor, it could burden the corporate fee. Thus, it influences corporate profitability especially when it concerns long-term debt. However, if the managers are aware of it as one of the working capital funds, it could increase the profitability, especially for the short-term debt.

## Model 2

### **The Influence of Cash Conversion Cycle**

The cash conversion cycle negatively and significantly influenced the corporate risk. Smith (1980), cited in Ban & Marti, (2012), also found the same result in Spain's MSMEs. It meant a higher cash conversion cycle led to higher working corporate capital addition from the cash. Thus, it could decrease the liquidity risk.

The additional investment in working capital could decrease the liquidity risk of companies. It means the companies must realize their financial obligation due. They must pay the debt with their current assets (Le, 2019).

This matter does not only apply to MSMEs but also larger corporations in India, from 2008 until 2016, listed in the 500 best companies in India based on BSE 500 index (Kaushik & Chauhan, 2019). The additional investment in the working capital could reduce the corporate business risk due to the cash reserve (Le, 2019).

### **The Influence of Sale Growth Level**

The sale growth level, GROWTH, showed negative and insignificant influences toward the corporate risk.

Thus, the sale growth did not influence the corporate risk. It was because the additional costs and asset growth followed the sale growth.

### **The Leverage Level**

The sale growth level, GROWTH, positively and significantly influenced the corporate risk. It showed that the debt ratio increased the corporate risk because the companies would be burdened by higher interest. Thus, it caused lowered operational profit and made the companies did not receive operational cash reserves. It would put the companies in an intense insolvent situation.

## **CONCLUSION AND SUGGESTION**

The research concludes that the cash conversion cycle negatively and significantly influenced corporate profitability and corporate risk.

The longer cash conversion cycle could decrease the corporate risk because the companies were seen able to pay the debt with the current assets. Thus, the companies would not be in an *insolvent* situation. However, it also had negative effects on the obtained corporate profitability.

With a longer cash conversion cycle, the corporate working capital would increase and lowered the corporate profitability. It was because the companies lost their opportunities to provide funds for the higher value investment projects. These companies had to pay the higher storage cost. A longer cash conversion cycle indicated the companies had difficulties selling the products. It also indicated their products remained in the warehouses and the marketing division did not run properly to bring their products in markets. It also showed the companies had bad debt.

From the results and discussion of this study, the researchers suggest the corporate managers to consider working capital management effectively to increase corporate profitability and minimizing corporate risks.

The applicable strategy for manufacturing companies to manage their cash conversion cycle is by shortening the reserve cycle and accelerating the sale, shortening the debt cycle by accelerating the debt collection, and expanding the

business debt cycle by postponing the payment on the raw material supplier.

For manufacturing companies with a longer cash conversion cycle, they must consider working capital management especially when they use debt. The managers should use short-term debt so the working capital investment will be more efficient to increase the corporate profitability and decrease the corporate risk in an insolvent situation.

This research recommends the future researchers use this research's findings as

an additional reference. However, since the determination coefficient values were still low, future researchers should add more supportive variables for both research models. They can do it by considering the long-term debt ratio, short-term debt ratio, debt ratio to an asset, and debt ratio to equity. Future researchers must consider the sizes and the ages of the companies. They also must broaden the industrial sector.

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