

# moderating effect

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## Moderating effect of business environment to working capital and profitability in Indonesia

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### Abstract

The purpose of this research is to provide empirical evidence about the effect of working capital profitability and to analyze the role of the business environment as a factor to strengthen and weaken the effect of working capital on profitability. The population of this study was all Indonesian public companies except those from the financial sector. Purposive sampling techniques were done to select 74 companies in the period of 2014-2016. The data consisted of 222 observations and is analyzed in a descriptive manner. Inferential techniques were also used by implementing the Structural Equation Modeling (SEM) with Partial Least Square (PLS) based on variance. This study found that the amount of working capital had a significant effect on the increasing profitability and the business environment was not a significant moderation of the effect of working capital on profitability.

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## Introduction

Financial management literature addresses three financial decisions that aim to maximize the value of the company. The three decisions include investment, funding and dividend decisions. Researchers in the financial field have been discussing the investment, capital structure, dividends or stock valuations and other topics. Meanwhile, the topics about working capital management are not widely explored and studied in financial research. This topic is important because each company will always need to maintain an optimal level of liquidity, avoiding them to experience difficulties in meeting short-term debts. Although the decisions in working capital management do not show a direct influence on the maximum value of the company, they are also equally important compared to the investment and funding decisions. This is because 60% of the time of a financial manager is used for working capital management policies (Akhmad, 2016). Generally, the initial job of a financial manager is to make a cash budget. This activity indicates that they determine investments in cash to be optimal.

51 Working capital policies will consider a trade-off between risk and return (Baños-caballero, García-teruel, Martínez-solano, García-teruel, & Martínez-solano, 2016; Orobia, Padachi, & Munene, 2016); profitability and risk (Aqil, Ahmed, Vveinhardt, & Streimikiene, 2019; Baños-caballero et al., 2016; Garcia-Teruel & Martinez-Solano, 2007); profitability and liquidity (Ernayani & Robiyanto, 2016; Handriani & Robiyanto, 2018, 2019; Singhania, Sharma, & Yagnesh Rohit, 2014; Tahir & Anuar, 2015) and trade-off risk and performance (Afrifa, 2016; Deloof, 2003; Maneerattanarungrot & Donkwa, 2018). A perspective believing that the trade-off between return and risk that a company with a working capital investment is too small will increase the risk, especially those which are related to reversing liquidity risk and if the investment in working capital is too high, it will increase the profitability because the risk is lower. The existence of a trade-off between risk and return is a reference that must be considered by financial managers in making working capital decisions.

Previous studies on working capital management and profitability show that they had a significant and positive effect (Amelia, Paulo, & Gama, 2015; Baños-caballero et al., 2016; Deloof, 2003; Knauer & Wöhrmann, 2013; Padachi, 2006; Talonpoika, Kärri, Pirttilä, & Monto, 2016). However, many also show that they had a significant and negative effect (Garcia-Teruel & Martinez-Solano, 2007; Mongrut, O'Shee, Zavaleta, & Zavaleta, 2014; Wasiuzzaman, 2015). The findings showed that investment in working capital was getting smaller so it increased the profitability. However, research shows the opposite.

61 The findings on the relationship between working capital management and profitability in different directions indicate that there are still gaps leading to these differences. This present study tries to include the business environment as a moderation in the relationship between working capital management and profitability. Environmental classification refers to several researchers such as those by

Balakrishnan and Wernerfelt (1986); Dess and Beard (1984) and Keats and Hitt (1998) in different ways. For example, Balakrishnan and Wernerfelt (1986) classified the environment with environment uncertainty as measured by two indicators, namely volatility and diversity. Furthermore, this study used three indicators as a reflection of environmental characteristics, namely significance, volatility and complexity (Dess & Beard, 1984; Sun & Cui, 2015). The purpose of this study included first, analyzing the effect of working capital on company profitability and second, analyzing the role of the business environment as a moderation of the effect of working capital on the profitability of Indonesian companies that were going public in the observation period of 2014-2016.

## Literature Review

### *Effectiveness of Working Capital*

Working capital is highly related to company liquidity. The relationship between liquidity and profitability is such a decision considered every day in its operations (Abuzayed, 2012). One of the measures of the effectiveness of working capital management is the Cash Conversion Cycle (CCC) (Abuzayed, 2012; Chauhan & Banerjee, 2018). The slower the CCC or the bigger the CCC, the slower the funds in working capital is regulated. The CCC concept shows that the time needed from cash is spent on the production process until the cash is returned to the company. The CCC is very important because all components in working capital will be obviously shown in the cash cycle (Chauhan & Banerjee, 2018). The CCC is calculated by reducing the average payment period throughout the company's operating cycle. The following is the CCC formula (Abuzayed, 2012; Chauhan & Banerjee, 2018; Deloof, 2003):

$$CCC = (\text{Inventory Conversion Period} + \text{Account Receivable Conversion Period}) - \text{Account Payable Deferral Period}$$

The CCC is related to the operations of the company which includes two main elements in current assets, namely accounts receivable and inventory. Accounts receivable from the sale of credit in working capital are measured by the account receivable conversion and inventory conversion period. In meeting the needs of raw materials, sometimes companies make purchases on credit, making their debt higher. The debts will reduce the number of cash days held in the company's operations. Therefore, companies need time to pay off the debt, or what is called a debt payable period.

The receivable conversion period measures the number of days when receivables can be collected or known as the Receivable Collection Period (RCP). The higher the RCP in days or months or years means that the cash cycle will be faster, resulting in the company not to experience difficulties in

cash. The RCP is related to sales, where the higher the RCP, the better the sales, although it is sold on credit which makes the total sales increase. The following is the formula of RCP (Singhania et al., 2014):

$$RCP = \left( \frac{\text{Account Receivable}}{\text{Sales}} \right) \times 365$$

The method of sale by the company includes cash and credit. When sales are made, the amount of inventory in the company will decrease. The comparison of the amount of inventory with the number of sales per day is measured by the Inventory Conversion Period (ICP). The higher the ICP value, the higher the sales of the company each day, making it possible to have an efficiency on the costs meant for inventory maintenance. The ICP in a company can be seen from the type of inventory in accordance with business activities carried out by the company. The ICP can be calculated by the following formula (Singhania et al., 2014):

$$ICP = \left( \frac{\text{Inventories}}{\text{COGS}} \right) \times 365$$

Sales made by the company begin with the production process for manufacturing companies. The production process includes the input and output process, where the result of this production process is the determination of the cost of production. Purchasing raw materials can be done in cash and credit. In a credit policy, the company has an obligation to pay the credit in accordance with the predetermined period of time. The measurement of the company's ability to pay the debt will be seen from how long it will take. The ratio used to measure this is the Payment Deferral Period (PDP). The faster the time needed to pay the debt, the more liquid the company is. The PDP can be measured by this following formula (Singhania et al., 2014):

$$PDP = \left( \frac{\text{Account Payable}}{\text{COGS}} \right) \times 365$$

### *Business Environment*

The environmental classification consists of the internal and external environment. The external environment consists of two main components, namely general and industrial environment (David, 2003; Keats & Hitt, 1998). The general environment includes elements in a broad society that can affect an industry and the companies in it. According to Yu and Ramanathan (2012), it is called a macro environment. The elements are grouped into environmental segments consists of demographic,

economic, political/legal, physical, socio-cultural, global and technological segments. The company cannot control these elements directly. Therefore, the challenge is how to understand each segment and their respective implications, so that the right strategies can be formulated and applied.

An industrial environment is a group of factors threatening the entry of new entrants, suppliers, buyers, substitute products and the intensity of competition among competitors that influence a company. Overall, the interaction between these five factors determines the company position in the industry when the company can influence these factors well, or it can also defend itself from the influence of the factors mentioned above. The greater the company's capacity to influence its industrial environment, the greater the tendency to gain earnings above the average or the microenvironment (Yu & Ramanathan, 2012).

The industrial environment is such a business environment that must be faced by companies. Indicators of the business environment include three things, namely munificence, dynamic and complexity (Dess & Beard, 1984; Keats & Hitt, 1998; Sun & Cui, 2015; Yu & Ramanathan, 2012). Munificence is used to describe matters relating to the availability of resources as a capacity to support growth. The growth of the company can be seen from the increase in sales, meaning that if the sales growth is high, the company must have a supporting source, namely the optimal amount of working capital investment. The carrying capacity of this growth can ultimately increase profitability because the company has an optimal resource capacity. Volatility is an uncertainty stemming from changes in market demand, speed of changes in competitors, integration between changes in demand and changes in competitors. Environmental uncertainty causes disturbance so companies must be able to overcome it. Complexity is defined as heterogeneity and concentration of environmental elements. A complex environment causes companies to be able to handle the competition.

### *Profitability*

Performance can be measured from several functions as a reflection of the company functions. One of the performances includes financial performance. Company profitability is an important factor in the assessment of management performance because it will focus on maximizing the welfare of the stockholders and increasing the value of the company (Abuzayed, 2012). Based on Hanafi (2016) factors reflect the profitability ratios are Return on Assets (ROA), Return on Equity (ROE), Gross Profit Margin (GPM), Operating Profit Margin (OPM) and Net Profit Margin (NPM). Profitability measures the level of the company's performance effectiveness in their activities. The after-tax profit indicates the performance of these activities whether they have been operating well or not. The higher the profitability ratios, the higher the efficiency in controlling costs in one period.

## Conceptual Framework and Hypotheses Development

There is a strong relationship between working capital management and profitability. The object of this study was 58 small manufacturing companies with panel data in the period of 1998-2003, whereas it was further analyzed by using regression. Furthermore, there is research by Afrifa (2016) which explains the implications of NWC and small and medium performance in the United Kingdom in 2004-2013 with a unit of analysis of 65.244 observations. The NWC for performance was such a concave and after the interaction of the effects from the CF was done, the form of the relationship changed into a convex. This showed the importance of the CF as it would reduce investment in working capital.

Amelia et al. (2015) used panel data in Portuguese SME where they had 6.063 observations within 6 periods (2002-2009). The dependent variable was ROA and the independent variable consists of two groups: 1) poker management and 2) control variables. The independent variables were the number of days of receivable (AR), the number of days of payable (AP), the average rate of VAT and the cash conversion cycle (CCC) where  $CCC = AR + INV - AP$ . The control variable was the log of assets (SIZE), growth of sales (GROW), leverage (DEBT), current asset ratio (CAR), CA / TA and CLR (CLR), and the macro variable included GDP growth. The data was analyzed by using OLS, fixed and random effects, F test and Hausman test. The findings of the study showed a negative relationship for INV, PMP, PMR, and CCC. All control variables were found to be significant. It was assumed that the company's profitability decreased along with the increasing debt and favorable economic cycles. It was also found that there were quadratic significant variables including INV, AP, AR, and CCC and there was a trend of decreasing RO along with increasing values for all variables.

A study by Baños-caballero et al. (2016) shows a relationship between working capital management and profitability for SMEs in Spain in 2002-2007 with 5.862 observation panel data. They found that the relationship between working capital management and profitability was such a concave. Further, they found that an investment in low working capital had an effect on the profitability of SMEs. Deloof (2003) examined the relationship between WCM and profitability with a sample of 1.009 companies in Belgium during 1992-1996. The findings indicated that managers could increase profitability by reducing the number of days in the accounts receivable and inventory. A small profit would hinder bill payments. The profit variable was measured by Gross Operating Income (sales-CGS) / (TA-FA). The WCM was measured by CCC. The control variables were SIZE, SALES GROWTH, DEBT RATIO, and TA. The data were analyzed by using Pearson correlation and regression (fixed model, OLS-Models). The findings of this study explained that the GOI and the number of days in debt were significantly negative for profitability while the CCC was not significant.

Pestonji and Wichitsathian (2019) conducted a test of the impact of working capital and profitability policies. The number of samples were 68 companies listed on the Thailand Stock Exchange

during the period of 2012-2016, the research period using path analysis. The findings show that there is a significant positive effect on working capital and profitability policies. Research using a sample of companies in Africa for the period 2005-2009 was conducted by Ukaegbu (2014). Ukaegbu (2014) employs the quantitative approach with panel data on companies in Egypt, Kenya, Nigeria and South Africa. The findings show that there is a negative relationship between working capital management and profitability.

Furthermore, the relationship between working capital management and profitability with studies in Tabreed was found by Venkatachalam (2017). The 2011-2015 research period with Pearson correlation techniques and multiple regression analysis found a negative relationship between working capital components and profitability. Research with a broader scope, namely in ASEAN countries conducted by Singhania and Mehta (2017). Research samples in non-financial companies in India, Pakistan, Sri Lanka, Bangladesh, Singapore, Thailand, Malaysia, Indonesia, Vietnam, Hong Kong, Japan, China, South Korea, and Taiwan during 2004-2014. For firms of Sri Lanka, India, Indonesia, Malaysia and Singapore, the lower levels of working capital relate positively to profitability whereas for firms of China, Pakistan, Bangladesh, Hong Kong and South Korea, the higher level of working capital is positively related to profitability and negatively for Thailand. Based on the description above, a hypothesis that can be proposed is:

H<sub>1</sub>: Working capital has a significant effect on company profitability

The environment is a variable that needs to be considered by the company because it can be a threat or an opportunity for the company. It is a threat for companies because the environment is uncertain (Balakrishnan & Wernerfelt, 1986). Khan and Quaddus (2015) described an environment based on their business environment in three perspectives namely turbulent, hostile and munificent. Environmental characteristics can be described by significance (Dess & Beard, 1984), dynamic (Yu & Ramanathan, 2012) and complexity (Sun & Cui, 2015). Munificence reflects the condition of resources in supporting sales growth. The more firm the company is in the effective use of resources, the higher the growth of the company. Dynamic reflects the volatility of changes that cannot be predicted in an industry (Dess & Beard, 1984). Volatility indicates the standard deviation of industrial sales. The environment faced is increasingly uncertain and has a high risk and it will be more turbulent for the company. Complexity is a measurement to determine the company's market share.

Working capital is needed because companies face market inertia in the real world. Several conditions of market imperfection that make important working capital decisions are such as transaction costs, late production process activities and the possibility of bankruptcy or difficulty in payment. Businesses run by companies sometimes face conditions where cash conditions or other current assets must be available. For example, if there is an opportunity to buy raw materials at a good price, the



company can immediately take advantage of the opportunity to buy at that price, resulting in sufficient cash to be highly needed. This means that the conditions of market imperfection encourage companies to hold working capital.

The ability of financial managers to determine working capital investments reflects effectiveness in achieving profit (Amelia et al., 2015; Baños-caballero et al., 2016; Deloof, 2003; Knauer & Wöhrmann, 2013). Working capital that pays attention to the business environment will strengthen the relationship between working capital and profitability. A turbulent business environment will be more complex than a low competitive business environment. The company's ability to face a turbulent business environment will help to achieve a competitive advantage through maximum use of resources, overcoming volatility and having a wider market share. Therefore, a hypothesis that can be proposed in this case is:

H<sub>2</sub>: Business environment as a moderation of the effect of working capital on profitability is a significant factor.

## Research Method

### *Data*

The data used in this study were secondary data from financial reports published on the Indonesia Stock Exchange, ICMD 2014-2016 and from the annual report of 2014-2016. The data collection method was done by documentation by downloading, recording and verifying the data based on the published financial statements.

### *Population and Samples*

The population of this study was all companies listed on the Indonesia Stock Exchange in the period of 2014-2016 which reached 594 companies. The target population in this study were all 594 public companies not including banks and non-bank financial institutions (insurance, credit agencies, securities companies) and the transportation and telecommunications sectors. The sampling method used was purposive sampling based on a criterion where the companies should have recorded their profits during the study period. Based on this criterion, 74 companies were selected, and thus this study used panel data of 222 observations.

### Research Variables

This study had three variables. The exogenous variable was working capital, the moderating variable was the business environment and the endogenous variable was profitability. The operational definitions of the research variables are summarized in Table 1.

Table 1  
Operational Variable of Research

Variable	Indicators	Measurement	Source
Working capital (X1)	RCP	Receivable Collection Period	$RCP = \left( \frac{\text{Account Receivable}}{\text{Sales}} \right) \times 365$
	ICP	Inventory Conversion Period	$ICP = \left( \frac{\text{Inventories}}{\text{COGS}} \right) \times 365$
	PDP	Payment Deferral Period	$PDP = \left( \frac{\text{Account Payable}}{\text{COGS}} \right) \times 365$
	CCC	Cash Conversion Cycle	$CCC = (RCP+ICP)-PDP$
Business environment (M)	Munif	Munificence	$MUNIF = \frac{SALES_t - SALES_{t-1}}{SALES_{t-1}}$
	Dyna	Dynamic	Variance of Industri Sales
	Comp	Complexity	$COMP = \frac{\text{Sales}}{\text{Industry's Sales}}$
Profitability (Y)	ROA	Return On Asset	$ROA = \frac{\text{Net Profit}}{\text{Asset}}$
	ROE	Return On Equity	$ROE = \frac{\text{Net Profit}}{\text{Equity}}$
	GPM	Gross Profit Margin	$GPM = \frac{\text{Gross Profit}}{\text{Net Sales}}$
	OPM	Operating Profit Margin	$OPM = \frac{\text{Operating Profit}}{\text{Net Sales}}$
	NPM	Net Profit Margin	$NPM = \frac{\text{Net Profit}}{\text{Net Sales}}$

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Li and Simerly (1998); Simerly and Li (2000); Sun and Cui (2015)

Hanafi (2016)

### *Data Analysis Technique*

The researchers used PLS because this study involved: (a) multivariable, where there was more than one variable, namely working capital management, business environment, and profitability; (b) latent variables, where the variables analyzed were unobservable; (c) a recursive model and (d) the relationship formed was a tiered causality.

Testing with PLS started with the fulfillment of linear assumptions and was followed by examining the outer model for each research indicator, and tested the inner model's goodness of fit with a total coefficient of determination. The bootstrap technique was used to answer the hypotheses. Hypotheses testing was done twice. The first test examined the direct effect where it was the effect of working capital on profitability. Next, it examines the effect of moderating variables. Testing the moderation of the business environment as a variable aimed to understand whether it strengthened or weakened the effect of working capital on profitability.

## **Results**

### *Descriptive Statistics*

The description of each research variable is shown in Table 2. The 222 observations show that the average working capital is 149x with a turnaround day is 2.4 days, indicating the optimal turnover rate for the companies in this study. The highest value of working capital turnover is 2.691x with a circulation day of 0.14 days. This average value reflected that during the research period, working capital rotated faster and this condition reflected the companies had been effective in making working capital decisions.

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Table 2  
Descriptive Statistics (N=222)

Variable	Min	Max	Mean	SD
WORKCAP	9.350	2,690.710	148.531	275.698
BUSENV	-0.070	217.970	8.656	25.693
PROFITABILITY	1.760	240.740	18.320	22.885

Source: Secondary data, 2018

The average business environment is 8.7% with a standard deviation of 25.7%, reflecting the distribution of the data that is quite widely dispersed because the maximum and minimum values are in the range of negative and positive values. The lowest value of the business environment is -7% while the highest value is 218%. This indicated that companies faced a fairly turbulent business environment. The companies must be able to face the turbulent business environment factors by making effective strategies in order to record profits.

The company's profitability on average has a positive value, indicating that the companies were efficient and effective in performing their activities. The lowest value of profitability is 1.76% and the highest is 240.7% which showed that there were companies with a high profitability value and there were also companies with a low profitability value. The data dispersion is quite far between the minimum and maximum values, causing the standard deviation value to be greater than the average value.

### *Unit Root Test*

The data stationarity test in this study was performed by using Augmented Dickey-Fuller (ADF) with a significance level of 5% and the results can be seen in Table 3.

Table 3  
Result of the Augmented Dickey-Fuller (ADF) Test

Variable	Augmented Dickey-Fuller test statistic	
	t-statistic	Probability
RCP	-10.750	0.000
ICP	-7.513	0.000
PDP	-3.897	0.002
CCC	-7.881	0.000
Munif	-22.439	0.000
Dyna	-6.442	0.000
Comp	-4.046	0.001
ROA	-8.304	0.000
ROE	-6.576	0.000
GPM	-2.891	0.004
OPM	-5.909	0.000
NPM	-7.165	0.000

Source: Processed data.

Based on Table 3., it can be seen that the probability level of all variables used in this study less than 5%, so the data is then considered as stationary data.

### *Measurement Model Assessment*

Testing the measurement model is used to validate the research model that was built. Two parameters used are constructed validity testing (convergent and discriminant validity) and construct internal consistency (reliability) testing.

Tabel 4

Latent Variables Correlations

Variables	Business Environment	Profitability	Working Capital
Business Environment	1,000		
Profitability	-0,106	1,000	
Working Capital	-0,094	0,332	1,000

Source: Processed data

Table 4 shows the results of correlations between latent variables and there is no correlation between latent variables. Furthermore, the value of discriminant validity testing based on cross-loading measurements of the constructed value is shown in Table 5. A score of more than 0.7 in one variable indicates that the discriminant validity is met. Based on Table 4 and Table 5, the measurement of the model can be continued for structural model testing.

Table 5

Discriminant Validity with Cross Loading

	Business Environment	Profitability	Working Capital
CCC	-0,080	0,358	0,990
ICP	-0,081	0,361	0,985
PDP	-0,127	0,112	0,718
RCP	-0,076	0,078	0,754
COMPLEX	0,990	-0,125	-0,094
DYNA	0,958	-0,062	-0,088
GPM	-0,115	0,961	0,369
NPM	-0,041	0,902	-0,003
OPM	-0,075	0,904	0,226

Source: Processed data

### *Inferential Statistics*

#### *Test for Linearity Assumptions*

The use of PLS in SEM requires a linearity test. The results of linearity testing **between working capital and profitability** and **the relationship between the business environment and profitability** are shown in Table 6 below:

Table 6

Results of Linearity Assumptions

		Sig.	Decision
WORKCAP →	PROFITABILITY	0.279	Linear
BUSENV →	PROFITABILITY	0.496	Linear

Source: Secondary data, 2018

The linearity test of this study used a curve estimate of 0.05 significance. If the significance value is <0.05, the relationship between variables is linear. Based on Table 6, it appears that all relationships between variables are not significant, but refer to the parsimony principle in the equation model based on the curve estimate that if one curve has a significant value that it is the same as a linear form and thus the relationship between these variables is linear.

*Evaluation of Measurement Model (Outer Model)*

*Working Capital*

Outer models in PLS were needed to be examined in each indicator on each variable studied. All indicators in this study were reflective so that the determination of the outer loading value was based on the outer weight and the t-statistic value was compared with t-table and the p-value was used for testing the decision other than testing with t-statistics.

Table 7  
 Evaluation of Indicator Testing: Working Capital

Indicators	Outer Weight	t-statistic	p-value
RCP	0.977	1.680	0.000
ICP	0.966	2.024	0.000
PDP	0.753	2.054	0.000
CCC	0.602	2.047	0.000

Source: Secondary data, 2018

The working capital variable with four indicators shows that all indicators are capable as a reflection of variables with a p-value <0.05. The RCP indicator is the highest indicator as a reflection of the working capital. The Receivables Collection Period (RCP) is a comparison of the total net receivables of the company against net sales multiplied by 365 days. The higher the day in collecting the accounts, the more effective the method of selling the company's credit.

*Business Environment*

The business environment is an environment that comes from within a company in the same industry. The business environment is measured by three indicators, namely significance, dynamic, and complexity.

Table 8

Evaluation of Indicator Testing: Business Environment

Indicators	Outer Weight	t-statistic	p-value
MUNIF	-0.212	0.422	0.673
DYNA	0.932	1.227	0.221
COMP	0.969	1.228	0.221

Source: Secondary data, 2018

Table 8 above shows that the outer weight of the indicator complexity is such a reflection of the business environment variables. The complexity indicators were the measurements of the company's sales performance when it was compared to the same industry sales performance. The higher the indicator ratio, the more complex the business environment that would be faced by the company.

#### *Profitability*

The evaluation of the company's financial performance is measured by profitability ratios. The company's profitability indicators in this study were reflected in five ratios, namely ROA, ROE, GPM, OPM, and NPM.

Table 9

Evaluation of Indicator Testing: Profitability

Indicators	Outer Weight	t-statistic	p-value
ROA	0.003	0.010	0.992
ROE	-0.128	0.357	0.721
GPM	0.883	1.866	0.006
OPM	0.812	1.930	0.055
NPM	0.049	0.126	0.900

Source: Secondary data, 2018

The value of the outer weight of each indicator in Table 9 shows that the two indicators are a reflection of the profitability ratio. The value of Gross Profit Margin (GPM) was measured by comparing gross profit with net sales. The higher the GPM, the higher the sales which could generate gross profit or high operating profit.

#### *The Model's Goodness of Fit*

The assessment of the equality model formed in this study was measured by the total determination coefficient value or predictive-relevance ( $Q^2$ ). The higher the  $Q^2$ , the more fit the variation in the two models of equations in predicting endogenous variables. Table 10 shows the  $Q^2$  value of 23.2%. This value indicated that the variables used in predicting profitability were still low because they were less than 50%. This explained that other variables outside the working capital and business environment variables in this research equation model still had the opportunity to predict the profitability.

Table 10

R-Square Value

Endogenous Variable	R-Square
Model 1	0.112
Model 2	0.135
Predictive-relevance (Q <sup>2</sup> )	0.232

Source: Secondary data, 2018

### Hypotheses Testing

The research hypotheses consisted of two, namely direct influence and influence with moderation. The direct effect was the working capital on profitability. The influence with moderation in the equation included the interaction between the business environment\* working capital. Direct testing and moderation will be discussed further. The direct effect testing of working capital on profitability can be seen in Table 8. below:

Table 11  
Hypothesis Testing

Effect among variable		Path coefficient	p-value	Decision
WORKCAP →	PROFITABILITY	0.335	0.000	Significant
BUSENV →	PROFITABILITY	-0.114	0.172	Not Significant
WORKCAP *	PROFITABILITY	0.164	0.385	Not Significant
BUSENV				

Source: from secondary data, 2018

Based on Table 11, it shows that working capital <sup>64</sup> has a significant positive effect on profitability. The path coefficient value is 0.335 and the p-value is < 0.05 which indicated that working capital could increase the company's profit. The interaction of working capital and business environment <sup>43</sup> was found to be insignificant with a path coefficient of 0.164 at a p-value of 0.385. These results indicated that the moderating variable was not significant so that the nature of this variable was as a homologize moderation.

### Discussion

Based on Table 11., it appears that the direct effect <sup>28</sup> of working capital on profitability is significantly positive. These findings indicated that proper management of working capital could improve the profitability of the company. This study empirically provided evidence that working capital was an important factor that must be considered by companies, especially for the financial managers in an effort to increase profits.



Financial managers are responsible for managing working capital where 60% of the time was needed to make decisions related to working capital (Akhmad, 2016). Working capital was a reflection of the company's liquidity because it was related to short-term investment decisions. Decisions in working capital were also used to evaluate the trade-off between returns and risks faced by companies (Baños-caballero et al., 2016; Orobia et al., 2016). There was a view that returns were such an impact on the results of investment decisions on working capital. The risk view was related to how much the company placed their funds in working capital. If it was too large, it would have an impact on idle and if it was too small, it would hamper the production process or company activities.

The findings of this study support the results of previous studies stating that the working capital was significantly positive towards positive profitability (Amelia et al., 2015; Baños-caballero et al., 2016; Deloof, 2003; Knauer & Wöhrmann, 2013; Talonpoika et al., 2016). However, these findings did not support the results of previous studies which showed a negative result such as those by Garcia-Teruel and Martinez-Solano (2007); Mongrut et al. (2014); Rahman and Nasr (2007); Singhania et al. (2014); Ukaegbu (2014); Venkatachalam (2017). Different findings could be caused by different measurements and indicators, the object of research wherein the previous study, there were only a few sectors and the manufacturing sector was a dominance, while in this research, all companies were public except the financial industry.

The influence of involving a moderating variable in this study had not been able to provide empirical evidence. The role of the business environment for companies was indeed an important factor. However, the companies in this study were able to overcome the turmoil that occurred in their business environment. The business environment in this study was measured by three indicators, namely significance, dynamic, and complexity. The dominant indicator as a reflection of the business environment was the complexity. The complexity measurement was done by comparing the sales of each company to industry sales. The complex business environment did not affect the effect of working capital on the profitability of the company.

Further, the business environment was important to note because it could create a threat or opportunity for the company (Yu & Ramanathan, 2012). The management of effective and appropriate working capital incorporate activities did not always have to consider the business environment factors, especially if the company was mature or the maturity itself would be sensitive if there was turmoil in the business environment.

This research was different from previous studies such as studies by Khan and Quaddus (2015); Nandakumar, Ghobadian, and O'Regan (2010); Yu and Ramanathan (2012), but was similar to the findings by Ray (2004). The reason why there were differences in the findings was more than the measurement of the environmental variables. Khan and Quaddus (2015) research measured the business

environment with three indicators, namely turbulent, hostile and munificent. While the research by Nandakumar et al. (2010) measured the environment using two indicators, namely dynamic and hostility. The research findings in the automotive industry explained that the environment could be measured by dynamic environments using Dynamic Capability View (DCV).

## Conclusion

This study empirically tests the direct effect and the influence of moderation. The results of the analysis show that working capital was significantly positive impacting profitability. The RCP indicator was a reflection of the working capital variable, indicating that the higher or the greater the RCP, the higher the level of profitability reflected in the GPM. The business environment did not moderate the effect of working capital on profitability. The more complex the external environment for companies, the more it showed that maturity was not an important factor that must be considered in an effort to increase profitability. Future research is recommended to deeper study this topic, especially in the role of the external environment that has not yet become a moderating effect of working capital on profitability. One recommendation that can be given is to also include the internal environment as a moderating variable.

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