

Working Capital Management, Firm Size and Firm Profitability

IBNU KHAJAR

Universitas Islam Sultan Agung, Semarang, INDONESIA

HERSUGONDO HERSUGONDO, UDIN UDIN

Universitas Diponegoro, Semarang, INDONESIA

Abstract: Working capital is one of the most important investment decisions of current assets as in fixed assets and funding policies run by the firm to achieve profitability and maximize the wealth of shareholders. This study aims to investigate the relationship between working capital, firm size and firm profitability. The samples of this study are manufacturing firms (e.g., food and beverage, cigarettes and cosmetics, and household appliances sector) which are listed on the Indonesia Stock Exchange (IDX) from the period 2010 to 2017. The data is processed and analyzed using Eviews 9. The results of the study reveal that working capital and firm size have a significant effect on firm profitability.

Keywords: Working capital management, firm size, firm profitability

1. Introduction

Working capital is one of the most important investment decisions of current assets as in fixed assets (capital budgeting) and funding policies (capital structure) run by the firm in order to achieve the objectives of profitability and maximization of shareholders' wealth (Mohamed Nurullah & Kengatharan, 2015), (Ali Saleh Alarussi, 2017). The components of working capital include cash retained, the level of receivables given to consumers, the amount of inventory held to support sales volume, and the level of trade debt used to finance part of the firm's sales (Abuzayed, 2012). Working capital is reflected in the balance sheet in current assets and current debt, so there is some understanding by linking these components, even by connecting between the two (Eljelly, 2007). The two components are very strategic to sustain the size of the sales level, which in turn affects the level of profitability and stock prices.

The availability of adequate cash can be used to finance the daily operations of the firm, if it is not enough, the firm must look for external funding sources which certainly have more expensive costs. Credit sales policies (accounts receivable) can increase consumer access to buy firm products and sustain sales increases. It takes several periods of waiting time to be able to receive and use cash back so that it affects the small amount of cash that must be provided.

The increase in sales volume as a result of competitive factors and the success of the business strategy being run must be supported by adequate inventory investment so that consumers still get the desired goods. The relationship between the amount of cash, the amount of accounts receivable to consumers and the amount of investment in inventory even the size of credit provided by suppliers of basic and raw materials is an important aspect in working capital management that must be a concern, which is no less important than investment in assets permanent. Working capital management is indeed very important for achieving business goals, but reality shows little attention from the management, research, and academics (Eljelly, 2007), (Kumar & Colombage, 2017).

Firms must pay attention to the choice of working capital policy because it will determine the level of profitability and value of the firm (Abuzayed, 2012). The availability of working capital can guarantee a steady level of sales, sustaining profitability, which ultimately is the firm's value and stock price (Raheman & Qayyum, 2010). The opposite condition is that excessive investment in current assets will reduce the rate of return on investment. Therefore, working capital management in order to achieve efficiency in working capital is seen as very strategic for achieving corporate objectives (Chowdhury, 2014).

An aggressive or moderate working capital policy results in two important aspects for shareholders, namely profit and risk. Investment minimization (aggressive) will increase profitability because fewer investments are needed, but dealing with risks such as the end of finished goods inventory so that consumers will turn to others. Minimizing the level of credit sales also has the potential to decrease sales. This risk can ultimately reduce the level of profitability and stock prices. Management must try to determine efficient working capital that can balance profitability and risk.

The homogeneity of the indicators of efficiency of working capital does not guarantee the homogeneity of the results of the study even in contrast to one another. On the one hand, it is noted that the efficiency of working capital as measured by Cyclus Cash Conversion (CCC) has a positive effect on profitability (Abuzayed, 2012), (Chowdhury, 2014). The more inefficient (moderate), the longer the CCC, the longer days in inventory, accounts receivable, and the shorter the repayment of trade debt the higher the level of profit. On the other hand, it was noted that the two variables had a negative effect (Kumar & Colomage, 2017), (Nobanee & Abdullatif, 2017), (Nwude, Agbo, & Ibe-lamberts, 2018), (Wasiuzzaman, 2016). The more efficient (aggressive), the shorter the CCC, the shorter days in inventory, accounts receivable and the longer the time lag for repayment of trade debt, the higher the profit and value of the firm.

The controversy over the striking results and the scarcity of research in Indonesia are very interesting to study and further research is conducted regarding working capital. Firm size is used as a controlling variable to strengthen the confidence in the effect of working capital efficiency on profitability and firm value.

2. Literature Review

2.1 Working Capital and Firm Profitability

The maximization of shareholders' wealth will be achieved by implementing three policies, one of which is investment decisions, both on fixed assets and current assets. Investment in current assets can be in the form of investments in cash, accounts receivable and inventory, which is often referred

to as investments in working capital (Kumar & Colomage, 2017), (Chowdhury, 2014). Working capital includes all components in the balance sheet on current assets, net working capital by not including current debt (Eljelly, 2007). Working capital management is a very important component of financial theory related to short-term funding decisions and corporate investment decisions (Kumar & Colomage, 2017). Working capital is also related to investment decisions and short-term funding (Chowdhury, 2014). Working capital choices and policies have implications not only on profitability but also on firm value (Abuzayed, 2012).

Working capital management has implications for the level of risk and profitability. The tendency to maximize profitability results in not the maximum availability of liquidity so that risks arise regarding short-term debt obligations. Conversely, focusing too much on liquidity can reduce profitability because of the greater investment in current assets. Efficient working capital involves planning and supervising current assets and current debt so as to avoid the risk of being unable to fulfill short-term obligations and avoid excessive investment which can reduce profitability (Eljelly, 2007). Efficient working capital is to provide a balance between the ability to eliminate the inability to meet short-term obligations and avoid excessive investment in current assets (Chowdhury, 2014). Efficient working capital is very vital because it directly affects the profitability and liquidity of the firm (Chowdhury, 2014).

The efficiency of traditional working capital is measured using several financial ratios such as Current Ratio and Quick ratio to determine the firm's ability if the firm ceases to operate or is liquidated (Jose et al., 1996). The reality of the firm remains operational so that the ratio is less useful because it is based on static financial statements. The measurement of a new dimension based on the assumption that the firm continues to run is the Cyclus Cash Conversion (CCC) which has been used by many researchers as a benchmark for working capital efficiency that has an effect on firm profitability and value (Jin-Yap, 2017), (Kumar & Colomage, 2017), (Nufazil Altaf, 2018). The CCC level is calculated by summing the accounts receivable turnover rate (PP) and trial turnover (PI) minus debt turnover (PH). PP is the ratio between accounts receivable and sales per day, the PI ratio between inventory

and cost of goods sold (HPP) per day and PH is the ratio between debt and HPP per day (Jose et al., 1996).

Profitability in financial statements includes several categories, starting from gross profit which is calculated from the reduction in sales value with the cost of goods, then operating profit or EBIT which is a continuation of gross profit minus operating costs. The value of these two types of earnings has not been influenced by the capital structure element which generally includes the source of debt funds which results in EBIT being reduced by interest costs and generating the third type of profit, namely pre-tax profit (EBIT). The efficiency of working capital, how it affects the profit level, tends to focus on EBIT because it focuses on assessing operational efficiency rather than looking at aspects of funding decisions. Some studies use Return On Assets (ROA) which is the ratio between EBIT and Total Assets because it focuses more on operational efficiency and avoids differences in capital structure (Jose et al., 1996), (Nwude et al., 2018).

H1: Efficiency of working capital has a significant effect on firm profitability.

2.2 Firm Size and Firm Profitability

The size of the firm reflects the capacity and ability of the firm to produce and sell goods and services to consumers within the framework of earning income and profitability. An overview of the cost aspects of a manufacturing firm that includes fixed costs and variable costs, an increase in the number of production means a decrease in fixed costs per unit which is an important factor in competition. They mean the highest level of sales and then the income and profitability are also getting bigger (Ali Saleh Alarussi, 2017), (Abor, 2005).

The resource-based theory states that the greater the number of resources owned, the greater the size of the firm, the greater the alternative of cheaper funding sources so that it can operate at a relatively low cost of capital (Ali Saleh Alarussi, 2017). No doubt the condition is able to boost the level of corporate profitability.

H2: firm size has a significant effect on firm profitability.

3. Methodology

3.1 Population and Sample

The population of this study is manufacturing firms that are listed on the Indonesia Stock Exchange (IDX) from the period 2010 to 2017. The samples are determined by using purposive sampling technique, taking into account the research variables are in the food and beverage, cigarettes and cosmetics, and household appliances sub-sector which have reports complete finance. The sub-sector in addition to conformity with variables is also an active sector because it meets the daily needs of humanity.

3.2 Data Source

The data used to analyze and answer the problem and the proposed hypothesis is secondary data in the Indonesia capital market (ICMD). The documentation method is also used for retrieving the required data.

3.3 Measures

This study uses the profitability (ROA) as the dependent variable, on the other hand, the independent variable includes the cash conversion cycle (CCC) which is an indicator of the efficiency of working capital and total sales (TS) as indicators of firm size. Measurement of the dependent and independent variables are shown in Table 1.

Table 1 Measurement

Variable	Indicator
Profitability	ROA = EBIT/ Total asset (Jose et al., 1996)
CCC	CCC=PP+PI-PH (Chowdhury, 2014), (Kumar & Colombage, 2017)
Firm size	Log Total sales (Ali Saleh Alarussi, 2017)

4. Data Analysis

4.1 Data Panel of Multiple Regression Analysis

The statistical analysis tool used is in accordance with the problem, the research hypothesis and data characteristics are panels multiple regression analysis with the help of program Eviews 9. This analysis technique is an analytical technique to study linear influences between two or more variables (Software & NCSS.com, nd), (Oscar, 2010). By using panel data it means that this procedure is used to analyze combination data between time series data and will be proposed two research regression models submitted to answer the research hypothesis.

4.2 Model Selection

There are three models in panel data multiple regression analysis, namely the common model, fixed model, and random model. This study uses a common model, which is the simplest panel data

model approach because it only combines time series data and cross-section. In this model, neither the time dimension nor the individual is taken into account, so it is assumed that the behavior of firm data is the same in various time periods.

4.3 Classical Assumption

Normality is one important aspect that must be tested in multiple regression analysis and must be saturated. Aim to test whether in the regression model, the dependent variable and the independent variable both have a normal distribution or not. A good regression model is to have normal or near normal data distribution.

5. Result and Discussion

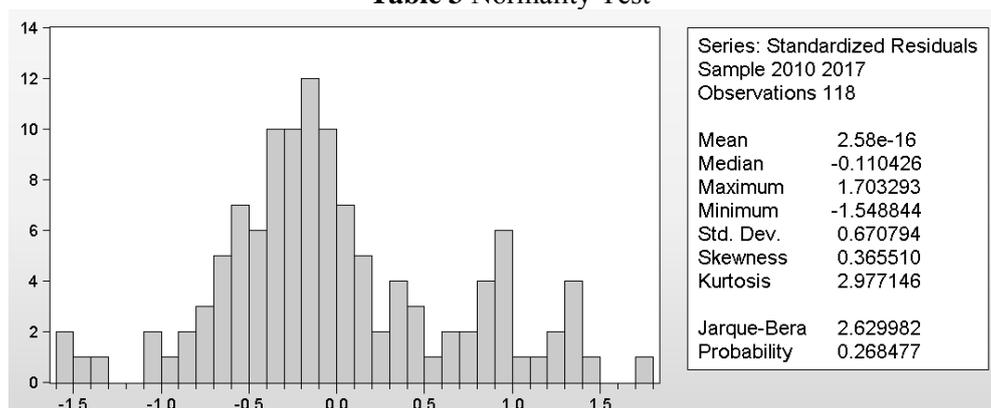
The description of the research variables which included profitability (ROA), cash conversion cycle (CCC) and firm size (total sales) after being processed with E-Views 9 software. The results are summarized in Table 2.

Table 2 Description of Variables

	ROA	LNROA	CCC	LNCCC	TOTAL_SALES	LOGTS
Mean	0.191025	-1.931088	134.3126	4.626432	16180931	6.587692
Median	0.124862	-2.080543	98.67122	4.597860	2629107.	6.419808
Maximum	0.871692	-0.137319	1113.835	7.015564	99091484	7.996036
Minimum	0.020358	-3.894257	-7.976162	1.031139	218748.0	5.339944
Std. Dev.	0.161405	0.724339	122.8906	0.805894	26049175	0.759602
Skewness	1.753584	0.305041	4.505379	-0.967906	1.668120	0.474840
Kurtosis	5.561086	3.105668	35.08004	6.670375	4.449295	1.960886
Jarque-Bera	93.51111	1.900852	5505.349	84.66020	65.60346	9.825683
Probability	0.000000	0.386576	0.000000	0.000000	0.000000	0.007352
Sum	22.73200	-229.7994	15983.20	545.9190	1.93E+09	783.9353
Sum Sq. Dev.	3.074077	61.91075	1782046.	75.98741	8.01E+16	68.08545
Observations	119	119	119	118	119	119

Based on Table 2, it can be described that the profit rate (ROA) of manufacturing firms in Indonesia for the period 2010-2017 averages 19%, which is a relatively high level of profit compared

to investment in the money market. Cash conversion cycle (CCC) of 134 days and total sales reached an average of 16 billion rupiahs.

Table 3 Normality Test

The panel data used in this study is normally distributed, because based on the results of data processing as in Table 3, it has the overall Jarque-Bera value of the dependent variable and independent data of 2.63 with a probability of 26.85% more than alpha 5% so that data is normally distributed.

A summary of the results of panel data processing using the e-Views 9 software with a common model approach, which correlates the dependent variable (ROA) and independent (CCC, and TS) as shown in Table 4.

Table 4 Hypotheses Testing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.989321	0.725211	-4.122004	0.0001
LNCCC	-0.153549	0.079117	-1.940782	0.0547
LOGSLS	0.267283	0.084544	3.161467	0.0020
R-squared	0.127256	Mean dependent var	-1.941724	
Adjusted R-squared	0.112078	S.D. dependent var	0.718035	
S.E. of regression	0.676602	Akaike info criterion	2.081627	
Sum squared resid	52.64583	Schwarz criterion	2.152068	
Log likelihood	-119.8160	Hannan-Quinn criter.	2.110228	
F-statistic	8.384177	Durbin-Watson stat	0.385838	
Prob(F-statistic)	0.000399			

5.1 The Effect of Working Capital on Profitability

The efficiency of working capital is measured by CCC and profitability with ROA, based on Table 4 panel regression analysis noted that CCC has a negative effect (-0.153) and significant (Prob. 0.055) at alpha 10%. This means that the higher or the longer the CCC or the more inefficient working capital, the profit (ROA) decreases. Conversely the shorter the CCC or the more efficient working capital the higher the level of profit.

The shorter the CCC, the shorter the money is tied to the firm, on the contrary, the longer it means the longer the money is embedded. Operational business firms mean that they have started to produce (goods or services) and certainly need funds. Funds will be embedded in the firm, which

starts from the purchase of raw materials, then is processed so that it turns into finished goods, then sold both non-cash (means finished goods turn into receivables), then receivables are collected (receivables turn into money back), or cash and in this case the process of the finished goods immediately turns into cash. If it is cash sales, then at that time the money has returned, from the beginning, it was bound when buying raw materials to sales. On the other hand, if non-cash sales, it is necessary to have extra waiting time to receive the funds back compared to cash sales.

The longer the funds are tied in the process of conversion from raw materials, finished goods, receivables, and cash can be said to be the longer the CCC, in other words, the management of working capital is loose and increasingly less efficient. On the other hand, the shorter the CCC,

the tighter the working capital policy and the more efficient.

Operational firms with continuous efficiency mean that every time you need funds to support them, then if the CCC is getting longer it means that the bigger the funds needed and ensured current assets and total assets are also greater when compared to firms running with CCC short. Obviously, the impact on profitability (ROA) is measured by the ratio between the level of profit and total assets. Two firms with the same level of profit, if one firm has a CCC shorter than the other would have a higher profit rate. The shorter the CCC, the more efficient working capital and the greater the level of profit, meaning that it has a negative effect on profitability. These empirical results support previous studies (AlHajjar, 2014), (Jin-Yap, 2017), (Kumar & Colombage, 2017), (Nobanee & Abdullatif, 2017), (Nwude et al., 2018), (Öhman, 2014), (Raheman & Qayyum, 2010).

5.2 Effect of Firm Size on Profitability

Firm size was measured by TS and profitability with ROA, based on Table 4 panel regression analysis noted that TS had a positive effect (0.267) and significant (0.002) at alpha 1%. This means that the higher or greater the size of the firm, the higher the level of profit (ROA). On the contrary, it's getting smaller; the size of the firm, the profit rate is also lower.

The bigger the firm the greater the capacity possessed in operating the firm. Investment decisions can be made with a larger volume, this is reflected in the level of sales produced. Other aspects are also increasingly alternative sources of funding used so that they are more maximal in selecting good funding sources. The direct impact will be reflected in the level of corporate profitability (ROA). These empirical findings support the results of previous studies as carried out by Ali Saleh Alarussi (2017).

6. Conclusion

This study concludes 2 main things, namely 1) The more efficient working capital the higher the level firm profitability; and 2) The larger the size of the firm the more the level of firm profitability.

Reference

- [1] Abor, J. (2005). *The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana*. The Journal of Risk Finance, 6(5), 438–445.
- [2] Abuzayed, B. (2012). *Working capital management and firms ' performance in emerging markets : the case of Jordan*, 8(2), 155–179.
- [3] AlHajjar, H. N. M. A. M. (2014). *Cash conversion cycle and firm ' s performance of Japanese firms*. <https://doi.org/10.1108/13217341111181078>
- [4] Ali Saleh Alarussi, S. M. A. (2017). *Factors affecting profitability in Malaysia*. *Journal of Economic Studies*. <https://doi.org/https://doi.org/10.1108/JES-05-2017-0124>
- [5] Chowdhury, A. T. (2014). *Effect of Working Capital Management on Firm Profitability : Empirical Evidence from Textiles Industry of Bangladesh.*, 5(8), 175–185.
- [6] Deloof, M. (2003). *Does Working Capital Management Affect Profitability of Belgian Firms ?*, 30(May).
- [7] Eljelly, A. M. A. (2007). International Journal of Commerce and Management Emerald Article : *Liquidity - profitability tradeoff: An empirical investigation in an emerging market*.
- [8] Garcia-teruel, P. J., & Martínez-solano, P. (n.d.). *Effects of working capital management on sme profitability*.
- [9] García-Meca, E., & Pedro Sánchez-Ballesta, J. (2011). *Firm value and ownership structure in the Spanish capital market*. *Corporate Governance: The International Journal of Business in Society*, 11(1), 41–53.
- [10] Jin-Yap, H. T. M. A. C. (2017). *How does working capital management affect the profitability of Vietnamese small and medium sized enterprises ? Introduction*.
- [11] Jose, M. L., Lancaster, C., & Stevens, J. L. (1996). *Corporate Returns and Cash Conversion Cycles*, 20(I), 33–46.
- [12] Khajar, I., Hersugondo, H., & Udin, U. (2018). *Antecedents and Outcomes of Corporate Governance: Evidence from Indonesia*. *European Research Studies Journal*, XXI(4), 480-492.
- [13] Khajar, I., Hersugondo, H., & Udin, U. (2019). *Comparative Study of Sharia and Conventional Stock Mutual Fund Performance: Evidence from Indonesia*.

Wseas transactions on business and economics, 16, 78-85.

- [14] Kumar, H. P. S. and S., & Colombage, S. (2017). *Working capital management and firm profitability: a meta-analysis*. <https://doi.org/10.1108/QRFM-06-2016-0018>
- [15] Lang, L. H. P., Stulz, R. M., & Walkling, R. A. (1991). *A test of the free cash flow hypothesis. The case of bidder returns*, 29, 315–335.
- [16] Mohamed Nurullah, & Kengatharan, L. (2015). *Capital budgeting practices: evidence from Sri Lanka*. *Facilities*, 33(11/12), 736–751.
- [17] Nobanee, H., & Abdullatif, M. (2017). *Cash Conversion Cycle and Firm's Performance of Japanese Firms*. <https://doi.org/10.1108/13217341111181078>
- [18] Nufazil Altaf, F. A. S. (2018). *How does working capital management affect the profitability of Indian companies?* <https://doi.org/10.1108/JAMR-06-2017-0076>
- [19] Nwude, E. C., Agbo, E. I., & Ibe-lamberts, C. (2018). *Effect of Cash Conversion Cycle on the Profitability of Public Listed Insurance Companies*, (January).
- [20] Öhman, D. Y. P. (2014). *The impact of cash conversion cycle on firm profitability An empirical study based on Swedish data*. <https://doi.org/10.1108/IJMF-12-2013-0137>
- [21] Raheman, A., & Qayyum, A. (2010). *Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan*, 47(47).
- [22] Saghir, A. (2011). *Working Capital Management And Profitability: Evidence From Pakistan Firms*, 1092–1105.
- [23] Singhania, M. (2017). *Working capital management and firms ' profitability: evidence from emerging Asian countries*. <https://doi.org/10.1108/SAJBS-09-2015-0060>
- [24] Wasiuzzaman, S. (2016). *Working capital and firm value in an emerging market*. <https://doi.org/10.1108/IJMF-01-2013-0016>.
- [25] Yunanto, A., Daryono, Wahyudi, S., Ghozali, I., & Udin. (2017). *The Value Relevance on Retail Trade Industry: Evidence from Southeast Asian Countries*. *International Journal of Civil Engineering and Technology*, 8(12), 519-526.