The Impact of Cash Conversion Cycle on Firm Profitability of Retail Companies

Ade Rizky[a], Mega Mayasari[b*]

[a]*Jurusan Manajemen Bisnis, Politeknik Negeri Batam, arizky.indonesia@gmail.com, Indonesia*
[b]*Jurusan Manajemen Bisnis, Politeknik Negeri Batam, mega@polibatam.ac.id, Indonesia*

Abstract. The purpose of this study is to investigate the impact of Cash Conversion Cycle on firm profitability of retail companies listed in the Indonesian Stock Exchange for the period of 2012-2015.This study use purposive sampling; therefore the data includes is 76 observations covering 19 firms in 4 years period. The hypothesis testing is using panel data regression. The result shows that CCC has negative effect to firm profitability. The short cycle of CCC will increase firm profitability. Firm size and firm age as control variables do not have significant effect on firm profitability. This study limits to Indonesia's retail company.

Keywords: cash conversion cycle, profitability, working capital, return on assets, firm size, firm age

Introduction

The increase in the Indonesian retail industry by 10% from 2015 in line with national economic improvement is good news for the country's retail industry. This would increase competition among retailers. Efforts to generate and increase profits must be owned by the company in view of the increasingly fierce competition. Companies should be able to increase the knowledge of retail management for the market to be managed optimally. One of them is the existence of the financial management function in managing working capital to support the company more effectively and efficiently to achieve the expected success. Management of working capital in the form of receivables from customers, the amount of inventory, and the level of debt to the improved performance in the company could maximize profitability. The calculation of the working capital used cash conversion cycle consisting of component inventories, receivables and debt. Cash conversion cycle regards the length of time it took the company to make a payment and to receives cash (Gitman, 1974). Cash conversion cycle is calculated from the average number of days of collecting receivables (receivables) combined with the number of days until the inventory

sold (inventory) then reduce by the number of days the implementation of the payment to the supplier (debt). The shorter the time required it will be more effective because it would reduce the working capital requirement (Reliadi, 2010). Cash conversion cycle as described by Yasdanfar (2014) is an overview of the critical process of the financial in the companies.

Empirical studies conducted by Lyroudi and Lazaridis (2000), which measures cash conversion cycle with performance of the food industry in Greece. The study states that there is a positive influence between the cash conversion cycle and performance of the company which had stated in the profitability ratio (ROA). Related studies also conducted by Gill et al (2010) to find the relationship between the cash conversion cycle on the profitability of the manufacturing industry in the New York Stock Exchange, American. It obtained a positive relationship between cash conversion cycle against gross operating profit and a negative relationship between receivables and profitability. But the inconsistency of the results occurs on Lazaridis and Tryfonidis (2005), which examines the effect of the cash conversion cycle on the profitability of the company and the results that the cash conversion cycle a significant negative effect on profitability. So with

---

*Corresponding author. E-mail: mega@polibatam.ac.id

the considerations in determining the cash conversion cycle will be able to produce a more optimal performance of the company. Research is also conducted by Yasdanfar and Ohman (2014) related to the effect of the cash conversion cycle to the profitability of companies using industrial SMEs. The study suggests that the shorter of cash conversion cycle will increase the profitability of the company.

The size of the company describes the company's ability to manage its working capital. Companies with large size have a greater chance of doing a debt or credit that working capital management is very important. Age company is considered important because it signifies the company's ability to survive and develop their business (Lyroudi and Lazaridi, 2000). Yasdanfar research and Ohman (2014) states that the size and age of the company's positive effect on the company's performance. This study is a replication of the research that has been done by Yasdanfar and Ohman (2014), which examines the effect of the cash conversion cycle, size and age of the firm to profitability of companies in the SME industry in Sweden. Differences in this study with previous research that the type of sample used. This study uses a retail company as an issuer listed on the Indonesia Stock Exchange (BEI) in the period 2012-2015. On the previous research is using the natural logarithm of total sales to test the size of the company, but this study using the natural logarithm of total assets.

Literature Review

Working Capital

Working capital related to the management activities of the current assets and current liabilities. Decisions relating to working capital funding sources both inside and outside the company. Own working capital is defined by Keown, et al. (2004) as the company's total investment in current assets or assets that are expected to be converted to cash within one year or less.

According Yasdanfar and Ohman (2014) working capital management related to cash management, inventory, and accounts receivable that could affect the company's short-term funding. Effective working capital management becomes very important for the continuity of the growth of the company. If the company is lack of working capital to expand sales and to increase production it would eliminate or reduce profits income.

Cash Conversion Cycle

Cash conversion cycle is a tool used by management to measure the company's ability to perform working capital management (Hanafi, 2004). It takes into the account of the contribution of inventory in influencing the level of corporate profitability in the retail company which supplies of a component of the company's investment is quite large. In addition to the inventory, loan repayment policies and receivables into the calculation of the cash conversion cycle.

Cash conversion cycle is the accumulated sum of the period of receivables and inventories less the period of debt repayment period. Minimize working capital can be done by speeding up cash collection from sales, increasing inventory turnover, and reducing cash spending. Good cash conversion cycle is a low cash conversion cycle, or negative, Gitman (2010).

Profitability

Profitability ratios are used to measure the efficiency of the use of company assets. Profitability would also determine the investor's decision to invest in a company. Profitability can be measured using an approach that deals with the sale, use of assets and own capital. Profitability ratios intended to measure how far the company's ability to generate profits from its sale, of assets owned or owned equity (Husnan, 2011).

Research Design

Types and Sources of Data

This study is a quantitative research because it uses a systematic approach to relations with the systematic use of models and theories and hypotheses regarding the phenomenon. Sources of data in this study is a secondary data with the ratio data type. Secondary data that the financial statements of the balance sheet and income statement acquired the retail industry in Indonesia Stock Exchange at www.idx.co.id.

Cash Conversion Cycle (CCC)

Cash conversion cycle is the sum of the length of the period of supply or the average age of the inventory (AAI) and average collection period (ACP) minus debt repayment period or average payment period (APP).

The components of cash conversion cycle:

1. The period of duration of supply or average age of the inventory (AAI)

The period of duration of supply (AAI) is a time period required to sell merchandise (inventory) from the existing warehouse.

2. Average collection period (ACP)

Average collection period (ACP) is the average time period required to convert accounts receivable into cash.

3. Average loan repayment period or Payment Period (APP)

Debt payment period (APP) is a time period needed for the purchase of merchandise to the implementation of the payment to the supplier.

Return on Assets (ROA)

Profitability measured using the approach relating to the use of assets, namely return on total assets, or better known as return on assets (ROA). This is because the value of the assets is relatively stable compared with the sale or use of equity. Large or small company so we can see one of them by using the natural logarithm of total assets. Return on assets is the ratio of net income to total assets to measure the return on total assets after interest and tax (Brigham and Houston, 2010). Return on assets which in a ratio scale is calculated by comparing the net income by total assets of the company (Keown, 2004).

Company Size (Firm Size)

Company size (firm size) is an indicator that shows the condition or characteristics of the company, the size of the company can be assessed in various ways, among others: total assets, total sales are obtained, the total equity employed and etc. The calculation of the size of the companies in this study using the natural logarithm of total assets. The use of natural logarithm to total assets is done to simplify the figure in the form of currency that is quite large. Measurements using proxy assets will be more stable than the sale or capital.

Age Company (Firm Age)

Age of the company used to measure the impact of the company on its website. Age company demonstrated to exist, to able to compete and to take advantage of business opportunities in an economy. By knowing the age of the firm, it will note also the extent to which the company is able to survive (Puasanti, 2013). In this study, the age of the company seen since the company operated until 2015. The Age of the company transformed into natural logarithm to avoid outliers and satisfy the assumptions underlying the analysis of variance.

Sampling

Withdrawal of this study using purposive sampling method that samples are not random but follows specific criteria that have been determined. Samples end of the study amounted to 19 companies in 4 years so that the research data amounted to 76.

Data Collection Techniques

Data collection techniques in this study is using the technique in the archive database. The data obtained on the website www.idx.co.id. The financial statements of the balance sheet and income statements of companies listed issuers in the retail subsector for the period 2012-2015.

Data Analysis Techniques

Data analysis techniques in this study is using panel data regression analysis. Panel data regression is a combination of time series and cross section. Here is a statistical tests performed: Descriptive statistics analysis, Panel data regression analysis, Classical assumption test, and Hypothesis testing. For the first hypothesis of panel data regression models were used:

$$ROA_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 Size_{it} + \beta_3 Age_{it} + \varepsilon_{it} \ldots (H1)$$

Results and Discussion

Although there are inconsistencies with the results of research that says the cash conversion cycle has a positive effect on the profitability of the company, the study sought to examine such inconsistencies. Reliadi research results (2015) which examines the effect of working capital is proxied using the cash conversion cycle to ROA say that the cash conversion cycle effect on profitability as measured by ROA. Similar results were also presented in the research Lazaridis and Tryfonidis (2006); Yasdanfar and Ohman (2014); Quayyum (2012); Anser and Malik (2013); and Fauzan (2015). Short cash conversion cycle which

indicates that the company receives cash before pay to the supplier so the company is able to manage its cash flow more efficiently. Short cash conversion cycle that will have an impact on cost savings and maximizing profits. So the cash conversion cycle is shorter negatively affected the profitability level. Cash conversion cycle in this study tested the hypothesis:

H1: Cash Conversion Cycle (CCC) negatively affect the company's profitability level

Statistic Descriptive

Based on the results of descriptive statistics in Table 1 shows that the average value of the dependent variable or mean return on assets or ROA amounted to 0.022551 which indicates that the average rate of return on assets of a retail company the period 2012-2015 accounted for 0.022551 for profit. The maximum score showed higher ROA retail companies which amounted to 0.457885 and the minimum value that represents the low ROA of -1,729,049. Standard deviation value of .276394 shows the average deviation of ROA.

Table 1. Descriptive statistics

	ROA	CCC	SIZE	AGE
Mean	0.022551	-6.269.792	27.94754	3.095015
Maximum	0.457885	292.3993	30.35205	4.043051
Minimum	-1.729.049	-235796.6	22.34878	1.386294
Std. Dev.	0.276394	34049.08	1.842146	0.636507
Sample (N)				76

Information: This table represents the results of statistical tests. Dependent variable: Return on assets (ROA). Independent variable: Cash conversion cycle. Control variables: Size and Age of the company

Cash conversion cycle is the difference between the period of time required approach to accounts receivable plus inventory storage period with repayment period of receivables to the supplier. The average value for the period 2012-2015 of CCC retail companies amounted -6,269,729 or for 7 days. The maximum value of 292,399,30 CCC showed the longest time the company to convert receivables into cash. The lowest value of -235,796.60 days to convert accounts receivable into cash. The average standard deviation indicates inequality of CCC at 34049.08.

Firm size is a control variable in this study. The average value of Size or size of companies measured using ln total assets showed the number of 27.94754. Firm variable size maximum value of 30.35205 shows the total value of assets of the company's largest rite. The minimum value of 22.34878 showed the lowest value the total assets of the company. The standard

deviation of 1.84216 indicates inequality average size of the company.

Firm age or the age of the company showed an average of 3.095015 indicating that the retail company in Indonesia for the period 2012-2015 amounted to 3.095015 of a natural logarithm. The maximum score is showing its age company amounted to 4.043051 of a natural logarithm. The lowest value of the company amounted to 0.636507 natural logarithm measured since the company stand up to years of research. Standard deviation or median age of the company amounted to 0.636507 inequality.

Model Test Results Eviews

Test Eviews models through test methods Chow and Hausman test can be seen in Table 2.

Table 2. Chow Test and Hausman Test

Hypothesis	Table 4.3 Chow Test and Hausman Test Probability		decision
	Cross-section F	Cross-section Random	
H1	0,0000	0,0000	Fixed Effect

Description: From two test models Chow Test and Hausman Test can be concluded that the right model used is Fixed effect without having to do the next test that is LM Test

To view the model Fixed Effect (FE) occurs heteroscedasticity or not, can be done by comparing the results of the FE without weighting (unweighted) and FE models with weighting (weighted). The comparison could be seen in Table 3.

Table 3. Heteroscedasticity Test Results

Parameter	FE Unweighted	FE Weighted
Prob. t-Statistic	< 0,05	< 0,05
R-squared	0,978145	0,983899
Prob(F-statistic)	0,000000	0,000000

Based on the above parameters are essentially no differences were too significant. In the R-Squared weighted larger FE models (better) than FE unweghted. It can be concluded no heteroscedasticity occur in model Fixed Effect (FE).

Hypothesis Testing

Hypothesis testing results are presented in Table 4 by using fixed effects model (fixed effect model). Based on the regression equation, it could be analyzed the effect of independent variable and two control variables on the dependent variable as follows: the constant value of 1.309371 states the value of CCC, Size and Age is constant then the value of ROA

amounted to 1.309371. The regression coefficient β1 has a negative relationship -6,52E-06 for CCC variable, meaning that each increase of one unit of CCC will reduce ROA amounted to 6,52E-06 unit and vice versa. Regression coefficient value of -0.029675 β2 and β3 of -0.161022. Value β2 and β3 no significant effect. This means that the control variables used Size and Age does not affect the level of corporate profitability (ROA).

Tabel 4. Regression equations with fixed effect model for H1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.309.371	0.436984	2.996.384	0.0041
CCC	-6.52E-06	2.82E-07	-2.310.885	0.0000
SIZE	-0.029675	0.019752	-1.502.406	0.1388
AGE	-0.161022	0.088570	-1.818.028	0.0746
R-squared				0.978145
Adjusted R-squared				0.969646
Sample (N)				76
Chow test, Hausman test				Fixed effect
Significance				5%

$$ROA_{it} = 1{,}309371 - 6{,}52E\text{-}06\,CCC_{it} - 0{,}029675\,Size_{it} - 0{,}161022\,Age_{it}$$

The results of fixed effects model shows that the variable CCC has prob. 0.0041 with a significance level of 0.05 or 5%. Therefore since 0.0041 <0.05, then H1 supported and negative coefficients. It can be concluded that the cash conversion cycle has a negative effect on company profitability (ROA). Firm size probability value of 0.1388 (0.1388> 0.05) and the age of the company amounted to 0.0746 (0.0746> 0.05), the size and age of the company rated no effect on the level of profitability of the company. Adjusted R-squared value of 0.969646, which means profitability affected the cash conversion cycle by 96% remaining 4% described other variables that are not included into the model.

Data Analysis

Based on the results of hypothesis testing CCC has a negative effect on the level of profitability (ROA) of retail companies listed in Indonesia Stock Exchange (BEI). The negative relationship means that the lower the value of CCC or the shorter the time the cash conversion cycle (CCC) will increase profits. This is because the company has received the cash from the sale before it has to pay its obligations to suppliers. So that the company can use the cash to fund daily operations and investment to current assets. This is in line with research conducted by Yasdanfar and Ohman

(2014) which states that there is a negative influence between the cash conversion cycle to the level of profitability of SMEs in Sweden. By optimizing the company's cash conversion cycle is able to increase its profit proportionally.

Testing the control variable which is a measure of the company or firm size and age of the firm or firm age did not affect the company's performance (ROA). Insignificant value of Prob. greater than alpha of 0.05 indicates that large companies will not necessarily be decreased if small companies emerged. Similarly, the long-established company that is not necessarily more profitable than a new company.

Conclusion

This study was conducted to test whether the cash conversion cycle negatively affect the profitability of retail companies. The sample in this study is registered as an issuer subsector retail in the Indonesia Stock Exchange (BEI) in the period 2012-2015. Total sample of this research are 19 companies with 76 retail data during 4 years. Research is using panel data regression analysis and fixed effect model.

The results of this study indicate that the cash conversion cycle negatively affect the profitability of retail companies. The influence of cyclical conversion of negative cash the level of profitability that proxy uses return on assets (ROA) proved that the shorter the period of the cycle of cash conversion will increase its profit for the company was able to finance the cash required for the activities of daily operations without having to make large loans so that in the absence of external borrowing costs will increase profits.

This study was limited to the retail industry. The research sample consists of 19 companies. This study uses panel data regression with fixed effects method (Fixed efffect method) so that data can be entered only 76 companies. Total period of four years of research during the year 2012 to 2015.

The retail industry competition was very tight at the moment, so a good working capital management is very necessary one with the use of the cash conversion cycle which is optimal to increase the profitability of retail companies. Companies can shorten the cash conversion cycle in the following ways: First, reduce the duration of the supply period. This can be done with inventory control. Second, reduce receivables. This can be done such as by tightening credit policies or optimize discounts. Third extend the repayment period by slowing payments.

Companies must be able to carry out the management of the current assets that will impact on fixed assets and other investments. Management of the cash conversion cycle which is optimal will help the company in conducting its operational activities that are expected to increase profits.

For researchers who want to test the research topic or research methods like these can use different samples such as non-retail industry, consumer goods, property, hotel, and other SMEs. Subsequent research can also make variations such as using different proxies used in this study, so they can know which more appropriate proxy for measuring the influence of related variables.

References

Anseer, R., & Malik, Q. A. (2013). Cash Conversion Cycle on Firm's Profitability - A Study of listed Manufacturing Companies of Pakistan. *IOSR Journal of Business Management, 8*(2), 83-87.

Boedijoewono, N. (2001). *Pengantar Statistik Ekonomi dan Bisnis.* Yogyakarta: Unit Penerbit dan Percetakan (UPP) AMP YKPN.

Brigham et al. (2010). *Dasar-Dasar Manajemen Keuangan.* Jakarta: Salemba Empat.

Fauzan, M. (2015). Pengaruh Modal Kerja (Siklus Konversi Kas) Terhadap profitabilitas Perusahaan (ROA).

Ghozali, I. (2011). *Aplikasi Analisis Multivariat dengan Program IBM SPSS 19.* Semarang: Badan Penerbit Universitas Diponegoro.

Gill et al. (2010). The Relationship Between Working Capital Management and Profitability; Evidence From The United States. *Business and Economic Journal*, 2010.

Gitman, L. J. (2010). *Principles of Managerial Finance.* 13th ed. United State of America: Pearson Prentice Hall.

Gujarati, D. (2012). *Dasar-dasar Ekonometrika.* edisi lima. Jakarta: Salemba Empat.

Hanafi, M. M. (2015). *Manajemen Keuangan.* Yogyakarta: BPFE Yogyakarta.

Harian Kompas. (2016, Desember Rabu). *Pertumbuhan Industri Ritel.*

Hartono, J. (2015). *Metodologi dan Penelitian Bisnis.* Yogyakarta: BPFE Yogyakarta.

Husnan, S. (2001). *Dasar-Dasar Manajemen Keuangan.* Yogyakarta: Liberty.

Keown et al. (2004). *Manajemen Keuangan.* Jakarta: PT Indeks Kelompok Gramedia .

Lazaridis, & Tryfonidis. (2006). The Relationship Between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis, 19*(1), 26-35.

Lyroudi, & Lazaridis. (2000). The Cash Conversion Cycle and Liquidity Analysis of The Food Industri in Greece. *Business and Economics Society International.*

Munawir, S. (2004). *Analisa Laporan Keuangan.* Yogyakarta: Erlangga.

Nachowi, & Usman. (2006). *Pendekatan popular dan praktis ekonomika untuk analisis ekonomi dan keuangan.* Fakultas Ekonomi Universitas Indonesia.

Puasanti, A. (2013). Pengaruh Ukuran Perusahaan, Umur Perusahaan, Konsentrasi Kepemilikan, Komisaris Independen, dan Laverege Terhadap Tingkat Pengungkapan Modal Intelektual.

Quayyum, T. S. (2011). Relationship Between Working Capital Management and Profitability in Context of Manufacturing Industries in Bangladesh. *International Journal of Business and Management, 7*(1).

Reliadi, X. L. (2012). Pengaruh Manajemen Modal Kerja Terhadap Return On Assets (ROA) Pada Perusahaan Retail Yang Terdaftar Di Bursa Efek Indonesia (BEI) Tahun 2008-2010.

Sartono, A. (1994). *Manajemen Keuangan Teori dan Aplikasi.* Edisi Keempat. Yogyakarta: PBFE Yogyakarta.

Vahid et al. (2012). Working Capital Management and Corporate Performance; Evidence From Irnian Companies. *Procedia-Social and Behavioral Science, 62,* 1313-1318.

Widarjono, A. (2007). *Ekonometrika: Teori dan Aplikasi Untuk Ekonomi dan Bisnis.* edisi kedua. Yogyakarta.

Yasdanfar, & Ohman. (2014). The Impact Of Cash Conversion Cycle On Firm Profitability An Empirical Study Based On Swedish Data. *International Journal of Managerial Finance, 10*(4), 442-452