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THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND PROFITABILITY IN CONSUMER GOODS COMPANIES LISTED ON INDONESIA STOCK EXCHANGE

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ABSTRACT

The expertise of the management to arrange working capital strategy is the key to optimizing a firm's profitability and increasing shareholders' wealth. The purpose of this study is to identify and determine the statistical relationship between working capital management and profitability in consumer goods companies listed on Indonesia Stock Exchange within the period of 2014 to 2016. Fixed financial asset ratio, financial debt ratio and firm size were used as the controlling variables. In data analysis, we used the multiple regression method with SPSS application. The initial population consisted of 39 companies in the consumer goods sector. However, after we implemented the purposive sampling method, there were only 36 companies included in this research. The results of our research showed that there is a statistically significant negative relationship between profitability, measured by gross profit and the cash conversion cycle, and the component of the cash conversion cycle including the number of account receivable days and the number of inventory days. The study also showed that there is no significant relationship between gross profit and the number of account payable days.

INTRODUCTION

In the consumer goods sector, there are many competitors offering the same products. Given the similarity of the target market, companies are required to obtain maximum profit. Each company has a different marketing and internal strategy to transform the production activity into a rapid cash flow. One of the strategies is a managerial accounting strategy, which focuses on maintaining efficient levels of current assets and current liabilities to

ensure that a company has sufficient cash flow to meet its short-term obligations (Akoto, Dadson, & Peter, 2013).

In addition, Deloof (2003) stated that regulating the working capital method has a significant impact on a company's profitability level. It shows that a certain level of working capital needs can generate maximum profit. It is also supported by Zariyawati, Annuar, and Pui-Sanal (2016), who explained that the goal of working capital management is to ensure that a firm is able to continue its operations by having sufficient cash flow to satisfy both maturing short-term obligations and upcoming operational expenses. Developing efficient working capital management will also secure a firm's financial position and help build its business. Therefore, it is important to know the determinant factors of working capital management to ensure that firms can withstand economic fluctuations over a long term.

The size of a company also matters in this case. Companies with fewer sales in cash tend to have problems with their cash flow and smaller firms focus on inventory management and routine credit management (Howorth & Weshead, 2003). On the other hand, companies with high growth are reluctant to give credit to their customers. Instead, they save large capital in inventory. Having an optimal inventory level will have a direct impact to working capital resources and investment in the business cycle. By managing the right expenditure in the production and sales process, companies will be able to control cash turnover, debts turnover and inventory turnover to generate maximum profitability. Thus, critical calculation and analysis in understanding market demand and inventory management are crucial. Failure to implement working capital management accurately will result in inefficiency operations and thus it will make the company unable to survive.

Based on such backgrounds, the authors of this paper argue that working capital management has established a strong relationship between cash conversion cycle in a company and profitability of the company. Thus, this paper aims to investigate the relationship between company profit and management from cash conversion cycle. The main issues of this study are as follows:

1. What is the relationship between cash conversion cycle management and profitability of consumer goods companies listed on the Indonesian Stock Exchange within the period of 2014–2016?
2. What is the relationship between receivables management and profitability of such companies?
3. What is the relationship between debt management and profitability of such companies?
4. What is the relationship between inventory management and profitability of such companies?

LITERATURE REVIEW

Working capital is an enterprise's investment in short-term cash assets, inventory securities and accounts receivable (Brigham & Weston, 2010). Adequate working capital provides several benefits such as (1) protecting the company against crisis due to the current assets value decrease, (2) allowing to pay all obligations on time (3) securing the company's credit that will be needed when facing possible financial difficulties, (4) enabling sufficient inventory, (5) enabling the company to provide more favorable credit terms

to its customers, (6) enabling the company to operate more efficiently because there is no difficulty in obtaining the required goods or services (Munawir, 2003).

Previous research such as Iswandi's (2012) found no negative and significant relationship between cash conversion cycle and profitability (measured by Gross Profit ROA) while the number of days in account receivable, inventory and account payable has a negative and significant influence to profitability. This supports the theory that reducing the cash conversion cycle or cash cycle can generate higher profits for the company due to the fact that the velocity of money in the company is accelerating.

Akoto et al. (2013) also examined the relationship between profitability and working capital management in 13 manufacturing companies listed on Ghana Stock Exchange. Using regression estimation approach and data covering the period of 2005–2009, the study found that account receivable days significantly and negatively influenced profitability of the listed manufacturing firms in Ghana. The study also discovered that the cash conversion cycle (CCC), current asset, sales, and company size significantly and positively affected profitability.

However, other working capital management and profitability research revealed different results. Gill, Nahum, and Neil (2010), examining 88 companies listed on the New York Stock Exchange from 2005–2007, found no statistically significant relationship between average payable days, average inventory days, firm size and profitability but noticed a negative association between account receivable and profitability. It suggested that managers can enhance the profitability of their firms by reducing the number of days for their account receivables.

In theory, firms can maximize profitability by controlling cash inflows and outflows and by shortening cash conversion cycles. Brigham and Weston (2010) stated that the cash conversion cycle can be shortened by (1) reducing inventory conversion that can be obtained by processing and selling goods faster, (2) reducing the acceptance period by accelerating billing, or (3) extending the period of suspended debt by slowing payments.

The research findings above showed the inconsistency between three components of cash conversion cycle and profitability. Some studies (Iswandi, 2012; Akoto et al., 2013; Gill et al., 2010) discovered that the cash conversion cycle had no negative and significant effect on profitability while other variables such as number of days in AR, number of days in AP and number of days in inventory displayed a negative and significant influence on profitability. Other studies, however, have found a strong negative relationship between the cash conversion cycle and corporate profitability (Lazaridis & Tryfonidis, 2006; Deloof, 2003). This inconsistency made us interested in researching these variables and to determine what effect these variables have on the consumer goods industry sector, which has become a basic need of a society that continuously consumes. Given the important role of working capital in a company to obtain optimal profit, we feel it is necessary to research the effects of working capital management on the profitability of the consumer goods companies listed on the Indonesia Stock Exchange (IDX). Fixed Financial Asset Ratio, Firm Size (Ln Asset) and Financial Debt Ratio are also considered important to measure the relationship or the effect.

Thus, this study aim to identify and analyze the relationship between cash conversion cycle management, receivable management, debt management, and inventory management on profitability in consumer goods companies listed on the Indonesia Stock Exchange within the period of 2014–2016.

MATERIALS AND METHODS

The data were collected from the financial statements of consumer goods companies listed on the Indonesia Stock Exchange. Initially, there were 39 companies observed in this study. However, after the purposive sampling method was implemented, some firms were not included. One company did not have the required research component and two companies had loss on gross profit during the period. In the end, there were only 36 companies included in this study.

The financial statements of public companies were obtained from the Indonesia Stock Exchange database from 2014–2016. A descriptive analytical method was used to analyze the data. Independent variables of this research were (1) cash conversion cycle, (2) number of days in account receivable, (3) number of days in account payable and (4) number of days in inventory. Furthermore, the dependent variable to be studied was gross profit and the independent variable controls were (1) fixed financial asset ratio, (2) financial debt ratio and (3) firm size. This research used the multiple regression analysis method which has previously tested assumptions as a requirement of the regression analysis test. We used a purposive sampling method with the following criteria: (a) consumer goods companies listed on the Indonesia Stock Exchange within the period of 2014–2016, (b) companies that were not delisted in 2014–2016, (c) companies whose financial statements fulfilled the required components, and (d) companies that did not lose gross profit during the study period.

Table 1 below shows a proxy definition of operational research variables used to test the relationship between each variable.

Table 1. *Proxy Definition of Operational Research Variables*

Variable	Proxy Variable	Measurement
Dependent Variable	Gross Profit (LnP)	Natural Logarithm of Gross Profit
Independent Variable	Cash Conversion Cycle (CCC)	No. of days in AR + No. of days in inventory – No. of days in AP
Independent Variable	No. of days in AR (ARDays)	(Account Receivable / Sales) * 365 days
Independent Variable	No. of Days in Inventory (INVDays)	(Inventory / COGS) * 365 days
Independent Variable	No. of Days in AP (APDays)	(Account Payable / COGS) * 365 days
Controlling Variable	Firm Size (LnA)	Natural Logarithm of Asset

Controlling Variable	Fixed Financial Asset Ratio (FA)	Fixed Financial Assets / Total Assets
Controlling Variable	Financial Debt Ratio (FD)	Total Liabilities / Total Asset

RESULTS AND DISCUSSIONS

This study used multiple regression analysis method. This method was in accordance with the methods of previous research from Lazaridis and Tryfonidis (2006) and Gill et al. (2010). The multiple linear regression analysis models used were:

Model 1 : $LnP = b_0 + b_1 FA + b_2 FD + b_3 LnA + b_4 CCC + \varepsilon$
Model 2 : $LnP = b_0 + b_1 FA + b_2 FD + b_3 LnA + b_4 ARDays + \varepsilon$
Model 3 : $LnP = b_0 + b_1 FA + b_2 FD + b_3 LnA + b_4 APDays + \varepsilon$
Model 4 : $LnP = b_0 + b_1 FA + b_2 FD + b_3 LnA + b_4 INVDays + \varepsilon$

The hypotheses specified are:
H_{01} : FA, FD, LnA, CCC, not significantly affecting dependent variable LnP
H_{01} : FA, FD, LnA, CCC, significantly affecting dependent variable LnP
H_{02} : FA, FD, LnA, ARDays, not significantly affecting dependent variable LnP
H_{02} : FA, FD, LnA, ARDays, significantly affecting dependent variable LnP
H_{03} : FA, FD, LnA, APDays, not significantly affecting dependent variable LnP
H_{03} : FA, FD, LnA, APDays, significantly affecting dependent variable LnP
H_{04} : FA, FD, LnA, INVDays, not significantly affecting dependent variable LnP
H_{04} : FA, FD, LnA, INVDays, significantly affecting dependent variable LnP

Table 2. *Summary of Four Model Results*

Model	R	Adjusted R^2	Sig
1. FA, FD, LnA, CCC	0.934	0.868	0.000
2. FA, FD, LnA, AR Days	0.920	0.840	0.000
3. FA, FD, LnA, AP Days	0.916	0.833	0.000
4. FA, FD, LnA, INV Days	0.935	0.869	0.000

The test criteria performed were:
1. Accept H_0 and reject H_1 if Sig (α) > 0.050
2. Reject H_0 and accept H_1 if Sig (α) < 0.050

It can be seen from the results that all research models showed Sig (α) <0.050. It can be concluded that the four models significantly affected Gross Profit.

The first model aimed to identify the effect of CCC and the Control Variable to dependent variable Ln Gross Profit. The result showed a strong relationship between CCC, FA, FD, LnA variables and the dependent variables LnP (knowing that R of the equation is 0.934 according to Tersine

correlation table). The value of Adjusted R2 was 0.868, meaning that 86.8% Gross Profit could be explained by CCC, FD, FA and LnA.

The second model aimed to determine the effect of the ARDays and variable control to dependent variable LnP. Knowing that the R resulting from the equation was 0.920 (according to the Tersine table), the analysis showed a very high correlation between ARDays, FA, FD, LnA and the dependent variables LnP. The value of Adjusted R2 was 0.840, meaning that 84.0% Gross Profit could be explained by ARDays, FD, FA and LnA.

The third model research was to examine the effect of APDays and variable control to dependent variable LnP. Knowing that the resulting R of the equation was 0.916 according to the Tersine correlation table, the result indicated a significant relationship between APDays, FA, FD, LnA variables and the dependent variables LnP. The value of Adjusted R2 was 0.833, meaning that 83.3% Gross Profit could be explained by APDays, FD, FA and LnA.

The fourth model research was conducted to examine INVDays and variable control on LnP. Based on the analysis, knowing that the R resulting from the equation was 0.935 according to the Tersine correlation table, it can be seen that there was a high correlation between INVDays, FA, FD, LnA variables and the dependent variable LnP. The value of Adjusted R2 was 0.869. This means that 86.9% of Gross Profit could be explained by INVDays, FD, FA and LnA.

Based on the data, the research has formed the first regression equation as described in the following table:

Table 3. *Equation Model 1.*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.020	1.281		.796	.428
	FA	-1.107	.401	-.106	-2.763	.007
	FD	-1.232	.315	-.150	-3.916	.000
	LnA	.972	.043	.850	22.392	.000
	CCC	-.003	.001	-.198	-5.148	.000

a. Dependent Variable: LnP

The first regression equation obtained is:

$$Y = 1.020 – 1.107\ FA – 1.232\ FD + 0.972\ LnA - 0.003\ CCC$$

It can be inferred from the equation that if the value of CCC, LnA, FD, and FA is equal to 0, LnP will increase by 1.020 and the effect is not

significant on LnP. An increase in FA ratio will decrease LnP because the relationship is negatively significant (1,107). It means that if a company engages in asset inclusion in another company, it will result in reduced profits. This is an indication that the level of the return earned is smaller than the opportunity cost. An increase in FD ratio will decrease LnP because the relationship is negatively significant at (1.232). This means that funding from third parties costs more than the opportunity to earn a profit for the company. An increase in LnA will increase LnP because the relationship is positively significant at 0.972. This means that if the size of the company is larger, it will increase profits for the company. This equation also shows a negative relationship between the CCC and LnP. This is consistent with the perception that a decrease in the CCC or cash conversion cycle will result in greater profits for the firm. When velocity of money in the company gets faster, less working capital is being used.

Based on the data, the research has formed the second regression equation, that is:

Table 4. *Equation Model 2*.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.572	1.393		-.411	.682
	FA	-.924	.440	-.088	-2.099	.038
	FD	-1.155	.347	-.141	-3.327	.001
	LnA	1.015	.048	.888	21.342	.000
	AR	-.003	.001	-.084	-2.016	.046

a. Dependent Variable: LnP

The second regression equation obtained is:

$$Y = - 0.572 – 0.924\ FA – 1.155\ FD + 1.015\ LnA - 0.003\ ARDays$$

It can be seen from the equation that if the value of ARDays, LnA, FD, and FA is equal to 0, LnP will decrease by (0.572) and the effect is not significant on LP.

The increase in the FA ratio will lead to a decrease in LnP because the relationship is negatively significant at (0.924). This means that if a company engages in asset inclusion in another company, it will result in reduced profit. It will also indicate that the rate of return earned is less than the opportunity cost. The increase in FD ratio will decrease in LnP because the relationship is negatively significant at (1.155). This means that funding from third parties costs more than the opportunity to earn profit for the company. An increase in LnA will increase the LnP because the relationship is positively significant

at 1.015. This means that the size of the company can affect the profit. If the size of the company is larger, it will increase profits for the company.

This equation also shows a negative relationship of (0.003, which has significant influence on ARDays and LnP. This means that the decrease in the days of receivable turnover cycle will lead to increasing profits for the company. This aligns with the assumption that the faster the company receives the receivable payments from its customers, the more working capital can be used for the company's operations.

Based on the data, the research has formed the third regression equation below:

Table 5. *Equation Model 3.*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.549	1.336		-1.160	.249
	FA	-.828	.446	-.079	-1.855	.066
	FD	-1.093	.352	-.133	-3.101	.003
	LnA	1.043	.046	.912	22.496	.000
	AP	-.001	.002	-.012	-.288	.774

a. Dependent Variable: LnP

The third regression equation obtained is:

$$Y = - 1.549 – 0.828\ FA – 1.093\ FD + 1.043\ LnA - 0.001\ APDays$$

It can be inferred from the equation that if the value of APDays, LnA, FD, and FA is equal to 0, LnP will decrease (1.549) constantly and the effect is not significant to LP.

The increase in FA ratio will cause the LnP to decrease because the relationship is negative (0.828) and the effect is not significant. This means that if a company engages in asset inclusion in another company, it will result in reduced profits. It also indicates that the rate of return earned is less than the opportunity cost. The increase in the FD ratio will lead to a decrease in LnP because the relationship is both negatively significant (1.093). This means that funding from third parties costs more than the opportunity cost to earn profits. Furthermore, the increase in LnA will increase LnP because the relationship is positively significant 1.043. This means that the larger the company, the more profit it can earn.

This equation shows that there is a negative relationship around 0.001 and its influence is not significant (between APDays and LnP). It implies that the decrease in the day of the cycle of debt rotation will increase company profits. Although the results are insignificant, this is in line with the

assumption that the company will be able to use its working capital to operate and generate profits by delaying the debt repayment.

Based on the data, the research has formed the fourth regression equation as follows

Table 6. *Equation Model 4.*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.621	1.249		.497	.620
	FA	-1.036	.398	-.099	-2.602	.011
	FD	-1.194	.314	-.145	-3.808	.000
	LnA	.987	.042	.864	23.251	.000
	INV	-.004	.001	-.193	-5.190	.000

a. Dependent Variable: LnP

The fourth regression equation obtained is:

$$Y = 0.621 – 1.036\ FA – 1.194\ FD + 0.987\ LnA - 0.004\ INVDays$$

It can be seen from the equation that if the value of INVDays, LnA, FD, and FA is equal to 0, LnP will increase 0.621 constantly and the effect is not significant to LP.

The increase in the FA ratio will lead to a decrease in LnP because the relationship is negatively significant (1.036). It means that if a company engages in asset inclusion in another company, it will reduce its profits. This indicates that the rate of return earned is less than the opportunity cost. An increase in FD ratio will decrease LnP as the relationship is negatively significant (1.194). It means that funding from third parties costs more than the opportunity cost to earn a profit for the company. An increase in LnA will increase LnP because the relationship is significantly positive 0.987. It means that if the size of the company is larger, it will increase the company profits.

This equation shows that there is a negative relationship of 0.004 between INVDays and LnP that gives a significant influence. The decrease in the day cycle of inventory turnover will lead to increased profits for the company. This is an indication that the longer storage of inventories in the warehouse will increase the cost of storing goods that will lower the company's profits.

CONCLUSIONS

This study aims to identify the influence of working capital management on profitability in consumer goods companies listed on the Indonesia Stock Exchange within the period of 2014–2016. The variables used in this research

were one dependent variable (gross profit), 3 variables of fixed financial asset ratio, debt to asset ratio and company size represented by the natural logarithm of asset. The independent variables tested were the cash conversion cycle, the receivable turnover ratio, the debt turnover ratio and the inventory turnover ratio.

The study revealed that, in the first test model, the cash conversion cycle with the three controlling variables has a significant influence and negative relationship. This is consistent with the perception that CCC decrease will result in greater company profits because the money velocity in the company gets accelerated, which means that less working capital is being used. This result is in line with Lazaridis and Tryfonidis' (2006) research which discovered that the negative relationship between accounts receivables and firms' profitability suggested less profitable firms as it will pursue a decrease in their accounts receivables in an attempt to reduce their cash gap in the cash conversion cycle. Therefore, managers can create profits for their companies by handling the cash conversion cycle correctly and keeping each different component (accounts receivables, accounts payables, inventory) at an optimum level.

The second model, which used the calculation of the number of accounts receivable days with three controlling variables, showed a significant influence and negative relationship. It means that the decrease in the days of receivable turnover cycle will lead to increasing profits for the company. This result echoes research by Gill et al. (2010) and is in accordance with the assumption that the faster the company receives the receivable payments from its customers, the more working capital can be used for the company's operations. Credit policy is a method used to attract new customers to generate large amounts of sales. Therefore, in order to maximize working capital, the balance must be maintained between accounts receivable and one which controls the receivable turnover. Acceleration of receivable turnover can be done by providing incentives for the consumers so that the consumers can pay their debt to the company. The incentives can be in terms of discounts, either for short-term payment or cash.

The third model, using the calculation of the number of days in accounts payables with three controlling variables, indicated that there was a negative relationship and its influence was not significant. It means that the decrease in the day of the cycle of debt rotation will lead to increasing profits for the company. Although the results are insignificant, this is in line with the assumption that the longer the company delays the debt repayment, the more the company can use its working capital to operate and generate profits.

The fourth model, which used the number of inventory days with three controlling variables, showed a significant influence and a negative relationship. It means that the decrease in days of the inventory turnover cycle will lead to a significant increase in corporate profits. This indicates that the longer storage of inventories in the warehouse will increase the cost of storing goods, thereby lowering the company's profits. The company can manage their inventory with the optimal amount to reduce the costs incurred from the inventory storage.

We expected managers or decision makers to understand and analyze the stability between account payable-account receivables and cash flows in controlling maximum profitability. If inventory is sufficiently stacked due to

a decrease in sales, it will be risky for the company since there will be some damaged goods and expired products. It is required that the company should have a good inventory management and accurate sales strategy to generate maximum profit levels.

This study had limitations in relation to the research object since it only focused on companies engaged in the consumer goods sector. Future research is expected to focus not only on the components of working capital management but also external components of the company such as the condition of the economy, the rate of inflation and the exchange rate of foreign currency. These components should be examined to determine what affects the company's behavior when deciding to buy raw materials both from outside and within the country (export/import), the price of the product and also the profit level of the company.

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