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The Effect of Working Capital Management on Firm's Performance of Food and Beverages Sector in Malaysia

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ABSTRACT

This research examines the effect of working capital management (WCM) variables and firm's performance using the data collected and analysed from listed firms in food and beverages sector on Bursa Malaysia. The sample comprises of 50 firms and the data is for 5 years from 2014 to 2018. The methodologies adopted in this research includes descriptive analysis, correlation analysis, Pooled Ordinary Least Square (OLS) regression, Breusch-Pagan (BP) Lagrange Multiplier test, and Hausman test. Various determinants of WCM have been identified to represent the independent variables (IV) namely days of accounts receivable, days of accounts payable, inventory turnover in days and cash conversion cycle. The dependent variable uses Return on Assets (ROA) as a proxy to measure the firm's performance. In this study, these two variables, accounts payable and cash conversion cycle has a significant and positive effect towards firm's performance of food and beverages sector in Malaysia.

Keywords: Working Capital Management, Firm's Performance, Food and Beverages Sector

INTRODUCTION

Working capital management (WCM) may be a critical range of monetary management, and the organization of working capital may have an imperative effect on the benefit and liquidity of the firm. Hence, it is important for the firm's management to evaluate the trade-off between productivity and risk some time recently choosing the level of investments within the current resources (Dong and Su, 2010). In other words, WCM is management of current assets and current liabilities. WCM related to the management approach is designed to reveal and utilize both capital elements, current assets and current liabilities in order to make sure the company's finance is most essential in economic operation. The primary purpose of capital management is to make sure that the corporate maintains sufficient income to hide short-run operational prices and short-run debt obligations. WCM is the company's potential to finance short- term assets and short- term liabilities that includes designing and dominant current assets and current liabilities in a way that, on the one hand, eliminates the threat of incapacity to fulfil short-time period obligations and prevents immoderate financing of such assets (Yusuf, 2012). The effect of the firm's performance is based mostly on its WCM. Working capital deals with the money wealth of a corporation and it conjointly plays necessary role in maximizing the shareholders wealth. Thus, every company desire to sustain the balance between liquidity and profit. The objective is to ensure that a firm will continue its operations and to able to create enough cash from operations to require care of short-run debt and future expenses (Bose, 2012). Firm financing will conjointly be managed efficiently through methods and policies that match the firm's working capital level at constant time to give a positive impact on the firm's performance within the long term. The results of this study can contribute to the company's management in deciding the right call to raise profits. Therefore, this study focuses on identifying the significant relationship between the management of working capital (WCM) and firm's performance of food and beverages sector in Malaysia.

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LITERATURE REVIEW

In general, performance is a measure of how well a method deliver its goal. Moullin (2003) defines the performance of an organization in company administration as well as how the organization is attempted and the costs to customers and other regulators provided by the organization. Performance is linked to the participation of shareholders or investors for the goals of this research. Open innovation studies have extensively increased considering the open innovation concept. Open innovation will be described as the use of purposeful inflows and outflows of records to improve immediately up interior innovation and expand markets for the external use of innovation. Until recently, open innovation studies targeted commonly on large companies. A lot of large companies, such as Procter & Gamble, successfully employ open innovation in their mechanisms. However, these studies are mainly based on secondary, theoretical or management data. Subjective measures adapted from Kellermanns and Eddleston (2006), were chosen to measure firm performance, as objective data of private firms are not easily obtainable. They have demonstrated a high correlation of subjective measures of firm performance with objective performance data, indicating the reliability of their method. Four performance related questions alluded to development in sales, market share, number of representatives, and productivity; and two performance related questions alluded to profit margin on deals and capacity to support development from profits. It can see that Kellermanns and Eddleston (2006) demonstrate on firm's performance to be reasonable since the estimations envelops to beat line performance, profitability, market share, measure of firm and capacity to develop within the market. Several theories have been advanced by scholars to support the effects of working capital management on firm's performance. Some of these theories are Pecking Order Theory and Agency Theory.

Pecking Order Theory

According to Weston and Copeland (1997) pecking order theory explains why companies have a sequence of preferences in selecting funding sources. Profitable companies normally borrow in small amounts. This is because the organization requires little external financing. Companies that are less profitable have a tendency to have larger debt due to the fact of internal cash that are not sufficient and due to the fact debt is the preferred external source. External cash are desired in the form of debt rather than equity because of consideration of the price of issuing long-term debt which is less expensive than the price of issuing shares. Increasing capital structure consists of positive data concerning to the company's potential to supply large amounts of debt. Conversely a reducing in capital structure gives a negative data signal.

Agency Theory

The agency theory was delivered by Mitnick (1973) that the research of agency theory in terms of issues of compensation contracting and came up with the now frequent perception that organization structure around agency and evolve to deal with agency in response to the critical imperfection of agency theory. Agency theory tries to give an explanation for a relationship between principals and agents in business. It is concerned with resolving issues that can exist in organization relationship. Pandula (2011) argued that the theory is on the concept of the principle of two-sided transaction which holds on any specific expectation. However, the issues recognized by agency theory are data asymmetry, ethical hazard and unfavorable selection. These theories aid researchers to recognize the intellectual arguments about the consequences of financial challenges on overall firm's performance.

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METHODOLOGY

Data Descriptions and

This research uses the secondary sources of data were obtained from the published annual reports and audited financial statements of the sampled companies from the food and beverages sector. The data are obtained covering the period throughout 2014 to 2018.

Research Design

In this study, the research design that will be used is based on the quantitative data used. Quantitative data is information data in the form of numbers. Based on these number symbols, quantitative calculations can be done to produce a generally accepted conclusion within a parameter. Therefore, in this study, the numbers from the quantitative data will be used to calculate the information needed in examining the correlation between the two variables which are dependent variable (Return on Asset) and independent variables (days of account receivable (DAR), days of account payable (DAP), inventory turnover in days (ITID) and cash conversion cycle (CCC)). Then, the statistical analysis will be used to determine the information needed and to examine the data significantly.

Data Collection

The collection of data has been taken from the search engine source which is DataStream database in UNIMAS. In addition, some of the data would be collected from the Bursa Malaysia where provided the annual reports such income statement and balance sheet of the companies. This study conducts the sample data for 5 years. Thus, companies' financial figures were collected for the period of 2014-2018 which will use for the research purpose through the companies' annual reports. The final sample of the study for the estimated model consists of 50 public listed companies from food and beverages sector.

Data Analysis

In order to test the relationship among each variable, several research methodologies were employed, that are, descriptive analysis, Pooled Ordinary Least Square (OLS) regression, Hausman test and Diagnostic tests. Descriptive analysis was applied to describe the simple characteristics of the variables included in this study. Pooled OLS regression was adopted to determine and establish the association between WCM variables and firm's performance. Diagnostic tests, on the other hand, was conducted before running the panel data regression to test whether the Classical Linear Regression Model (CLRM) assumptions have been fulfilled or not. These diagnostic tests were important to indicate whether these assumptions could cause estimation problems. If these assumptions are not meet, then any interpretation of the regression estimates will be invalid. BP Lagrange Multiplier test was conducted to decide whether to apply Pooled OLS regression or random effects model. Hausman test was performed with the purpose of choosing either Fixed- Effects Model or Random-Effects model in which model is more suitable to use if the random effects model is preferred.

Description of variables

The dependent variable in this study is return on asset (ROA), a proxy used as a measure for firm's performance while the independent variables (IV) are days of account receivable (DAR), days of account payable (DAP), inventory turnover in days (ITID) and cash conversion cycle (CCC).

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Measurement of Variables

Table 1 shows the independent variables and dependent variable description with measurement used to test the hypotheses in this study.

Description	Measurement	Variable
Return on Assets (ROA)	Net Income / Average Total Assets	Dependent Variable
Days of Acounts Receivable (DAR)	Account Payable / Cost of Goods Sold × 36	Independent Variable
Days of Accounts Payable (DAP)	Account Receivable / Net Sales × 365	Independent Variable
Inventory Turnover In Days (ITID)	Average Inventories / Cost of Goods Sold × 36	Independent Variable
Cash Conversion Cycle (CCC)	Average Collection Period+Average Payable Period+Inventory	Independent Variable
Firms Size (SIZE)	Natural Logarithm of Sales	Control Variable

Table 1: Dependent and Independent Variables With Measurement

Therefore, the functional form can be estimated under following model:

$$ROAit = C + \beta 1(DARit) + \beta 2(DAPit) + \beta 3(ITIDit) + \beta 4(CCCit) + \beta 5(SZit) + \varepsilon it$$

where ROA represents return on assets. i represents the cross-sectional unit while t represents the period of time (2014-2018). C is the intercept or constant term while B_1, β_2, β_3, β_4, β_5 are estimated coefficient of the independent and control variables. Also, ε refers to the random error term. The set of independent and control variables include:

DAR = Days of Account Receivable
DAP = Days of Account Payable
ITID = Inventory Turnover In Days
CCC = Cash Conversion Cycle
SZ = Firms Size

Conceptual Framework

The following Figure 1 represents the conceptual framework for the relationship between variables. There are 7 variables have been used in this study; one dependent variable (DV) which is Return on Assets (ROA), four independent variables (IV) which are days of account receivable (DAR), days of account payable (DAP), inventory turnover in days (ITID) and cash conversion cycle (CCC) and one control variable (CV) which is the firms size (SZ).

Research Hypothesis

The hypothesis for each variable used in this study is based on the research objectives. Four hypotheses are developed below to examine the relationship between working capital management and firm's performance (ROA).

H_1: There is significant positive relationship between days of accounts receivable and firm's performance.
H_2: There is significant negative relationship between days of accounts payable and firm's performance.
H_3: There is significant negative relationship between inventory turnover in days and firm's performance.
H_4: There is significant positive relationship between cash conversion cycle and firm's performance.

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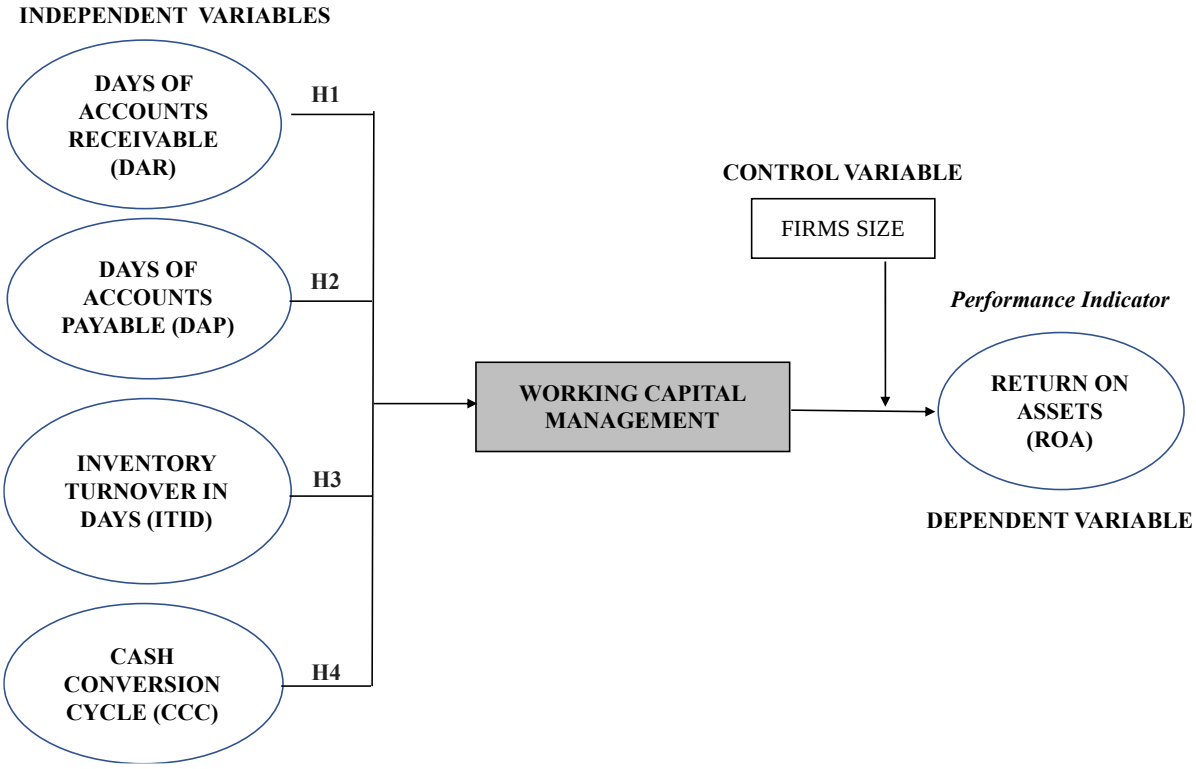

Figure 1: Conceptual Framework for the relationship between working capital management variables and firm's performance in Malaysia

RESULTS AND FINDINGS

The findings of the descriptive analysis, correlation analysis, Pooled Ordinary Least Square (OLS) regression, Breusch-Pagan (BP) Lagrange Multiplier test, and Hausman test were analysed and discussed as follows:

Descriptive Analysis Results

Table 2 demonstrated the descriptive statistics outcomes of dependent variable (DV) , return on assets (ROA) and the independent variables (IV) are days of account receivable (DAR), days of account payable (DAP), inventory turnover in days (ITID) and cash conversion cycle (CCC). In addition, control variables included are firm size. The summary statistics for 50 observations are presented in the table below.

Variables	Observations	Mean	Std. Dev.	Minimum	Maximum
ROA	50	5.2199	6.1139	-20.0000	31.0800
DAR	50	6.9204	5.7815	1.0000	43.4000
DAP	50	4.2403	2.9283	0.3400	18.4800
ITID	50	5.9153	4.4005	0.0100	32.1600
CCC	50	8.5958	6.6943	-1.3000	35.3100
SIZE	50	6.2299	0.6282	5.2200	7.9700

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Table 2: Descriptive Statistics

The table above showa the mean of dependent variable, ROA is 5.2199 with the minimum, maximum and standard deviation of -20, 31.08 and 6.1139 respectively. For the first IV, DAR has the mean of 6.9204, which suggests that higher number of days that a purchaser invoice is outstanding before it is collected. It shows that the companies are less effective credit and collection efforts in allowing credit to reliable customers, as well as its ability to collect cash from them in a short time. The minimum and maximum values for days of account receivables are 1.0 and 43.4 respectively. Next, the values of mean, standard deviation, minimum and maximum for DAP are 4.24, 2.93, 0.34 and 18.48. The average of days of account payable is high which indicates high number of days a company will spends to pay its suppliers. It shows the companies chosen has less the efficient in managing the short-term account obligations or debt with the suppliers. The third IV, ITID has a minimum of 0.01 and a maximum of 32.16 with an average of 5.9153, indicating the companies has more effectiveness on convert their inventory into sales or profits. In addition, the mean of the fourth IV, CCC is 8.5958. It suggests that the number of days that the company needs to generate sales or revenues with the assets is high. The minimum value is negative value which is -1.3 and the maximum value is 35.31. It indicates that the companies in food and beverages sector less efficient to create or buy the inventory, sell the inventory and collect on invoices to customers.

Correlation Analysis Results

The results in Table 3 reports that there is no multicollinearity problem since all the values of correlation between each variable are below 0.8.

Variables	ROA	DAR	DAP	ITID	CCC	SIZE
ROA	1					
DAR	0.1315**	1				
DAP	0.1186*	0.3168***	1			
ITID	-0.0103	0.0394	0.3038***	1		
CCC	0.0550	0.7510***	0.0359	0.5585***	1	
SIZE	0.0170	0.2060***	0.0671	-0.0651	0.1057*	1

Notes: Correlation is significant at ***0.01, **0.05, and *0.1 levels

Table 3: Pearson Correlation Coefficients

From the table above, the association between ROA with DAR and DAP are positive and statistically significant at 5% and 1% level significant respectively. Meanwhile, CCC and firm size are positive and statistically insignificant. Otherwise, only ITID is observed to be negatively correlated with ROA and the relation is statistically insignificant. Consistent with expectations that DAR and DAP indicates that higher number of days of account receivable and lower number of days in payable induces better firm performance. In terms of DAR and DAP, a positive correlation is found between ITID, CCC and firm size with these two variables. However, for DAR, only ITID is found insignificant while others are significant at 1% significant level. For DAP, CCC and firm size are found insignificant while ITID is significant at 1% significant level. The significant correlation between ITID and DAP indicates that the higher number of inventory turnover induces the higher debt obligations occurs in these companies. In addition, there is a statistically insignificant negative relationship of ITID with firm size. This may show

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that no relation between the size of firm with the volatility if inventory turnover. On the other hand, ITID and CCC to be positively and significant relationship at 1% significant level. CCC indicates number of days whether shorter time or longer time to buy or create an inventory, sell it and receive cash from customers. Since the relation between ITID and CCC are positive significant, it shows that chosen these companies take a shorter time to receive the cash and it show a good condition. Finally, with regards to CCC, firm size shows significant positive correlation with this variable at 10% significance level. The relationship between CCC and firm size reveals that larger firm tend to take shorter time to buy or create an inventory, sell it and receive cash from customers. The conclusion is most of the variable show a positive correlation to each other; either significant or insignificant refers to the result on the table.

Hausman Test Results

The Hausman test is to choose between the Fixed-Effects Model and Random-Effects Model, which is more appropriate to use. The result of Hausman test are illustrated in Table 4 below:

Model	Test statistic (Chi²)	d.f.	Prob.
ROA	1.348354	5	0.9299**

Test Summary	Test statistic (Chi²)	d.f.	Prob.
Cross-section random	1.348354	5	0.9299**

Notes: ***, **, * denote statistically significant at 1%, 5%, and 10% level respectively.

Table 4: Hausman Test Results

The results from the table above shows that the p-value is 0.9299, which is higher than 0.05 and is statistically insignificant. Therefore, the null hypothesis cannot be rejected at 5% significance level. The not rejection of null hypothesis concluded that Random-Effects Model is more appropriate to explain the empirical research for this study.

Random-Effects Model Results

The results from the Table 5 below reveals that the R-squared for the model is 0.7371, which means that 73.71% of the variation in ROA is well explained by both independent and control variables. The remaining 26.29% is attributed to other factors included in the error term. Adjusted R-squared is a measure of goodness of fit of the model in this study, which is 0.6643 or 66.43%, indicating the model best fits the data. In addition, the F-statistic is 10.1267 with p-value of 0.0000 which is statistically significant at 1% significance level, therefore the null hypothesis is rejected. This can be said that variation in ROA is adequately explained by the independent and control variables.

Variable	Coefficient	Std. Error	t-statistic	p-value
DAR	-34.4463	141.4111	-0.2436	0.8078
DAP	34.9256	141.4110	0.2469	0.8052
ITID	-34.8501	141.4051	-0.2465	0.8056
CCC	34.6851	141.3999	0.2453	0.8065
SIZE	-0.8158	2.8627	-0.2849	0.7760
Constant	8.6108	17.7182	0.4859	0.6275
R-squared	0.7371		**F-statistic**	10.1267
Adjusted R-squared	0.6643		**Prob(F-statistic)**	0.0000

Notes: ***, **, * denote statistically significant at 1%, 5%, and 10% level respectively.

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Table 5: Random-Effects Model Results

For the first independent variable, the estimated coefficient of DAR is negative with p-value of 0.8078, which is statistically insignificant at any significance level. This suggests that DAR has negative insignificant influence on firm performance. As anticipated, the negative result is in support of the hypothesis 1 by Gill et al. (2010) which predict an inverse relation between the periods of Account Receivable collections and profitability. In addition, Baveld (2012), Dellannay and Weill (2004) also found the similar findings which are the relation is positive, but the variable is statistically significant. Next, DAP, the coefficient is positive with p-value of 0.8052 which is statistically insignificant at any significance level. It indicates that DAP has positive relationship exists with firm performance. The result is supported by Solano and Teruel (2007) which stated that the profitability of the company would be more desirable by reduction of the number of days in receivables, inventory days and cash cycle size. So, the relation between account payable with gross income is negative. Unfortunately, the finding shows significant which contradict with this study. Hence, the hypothesis 2 for this study is not supported. In terms of ITID, the coefficient is -34.4463 with p-value of 0.8056. The results indicate that ITID is inversely correlated with firm performance, but the relationship is statistically insignificant. The fact that there is negative insignificant relationship between ITID, and firm performance implies growth of retaining inventory produce a decreasing in the income of the companies. Based on the finding, the hypothesis 3 that ITID is significantly related with firm performance is rejected. This result is not supported with findings by Sitienei and Memba (2015), Alipour (2011) and Deloof (2003) that stated poor relationship between inventory turnover and profitability on company performance, but all the findings are statistically significant. So, hypothesis 3 is not supported. With respect to CCC, the study shows that a positive significant association exists between CCC and firm performance with the coefficient of 34.6851 and the p-value of 0.8065, which is statistically insignificant at any significance level. This can be said that the profitability could increase if the cash conversion cycle element is getting higher. The positive result is supported by Gill et al. (2010). Thus, the hypothesis 4 in this research is hereby supported. Mostly, this findings contradict with most researchers such as Alavinasab (2013), Anser and Malik (2013), Karaduman et al. (2011) and Dong and Su (2010) that stated there is a negative significant association of WCM; measures of CCC with profitability and ROA. For the control variable, firm size has negative value of coefficient and statistically insignificant at any level of significant. In other words, public listed companies' performance for food and beverages sector in Malaysia is inversely affected by firm size, which implies that larger firm tend to perform worse than smaller banks. This may be because the firm may face agency problem and not able to monitor and control the business effectively as their size increases. The negative relationship of firm size with performance confirms the finding of Obehioye and Osahon (2013) who also found that firm size has inverse impact on performance. Overall, it can be concluded that the WCM variables, DAP and CCC have positive insignificant impact while DAR and ITID show negative relationship on firm's performance of food and beverages sector in Malaysia. Table 6 summarised the findings related to the hypotheses.

Hypotheses	Results	Supported/ Not supported
H1: There is a significant relationship days of account receivable and firm's performance.	Negative insignificant	Supported
H2: There is a significant relationship day of account payable and firm's performance.	Positive insignificant	Not Supported
H3: There is a significant relationship inventory turnover in days and firm's performance.	Negative insignificant	Not Supported
H3: There is a significant relationship cash conversion cycle and firm's performance.	Positive insignificant	Supported

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Table 6: Summary of Hypotheses

CONCLUSION

This study aims to determine whether there is relationship between working capital management and firm's performance of companies from food and beverages sector in Malaysia. This study serves to reveal the effect of working capital management and firm's performance by estimating the impact of days of accounts receivable, days of accounts payable, inventory turnover in days and cash conversion cycle of companies listed on Bursa Malaysia for five years periods from 2014 to 2015. This study is evidence to explain that the firm's performance will be improved by adopting effective accounts receivable and inventory management practices. Even though all the hypothesis stated insignificant and some of it are not supported based on the results, this study has achieved the objectives by examining and explaining the correlation between each accounts receivable and inventory management variables with the public listed performance in food and beverages sector.

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