



The Relationship between Working Capital Management and Profitability of Bumiputera-Controlled Companies in Malaysia

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Abstract: This study investigated the relationship between working capital management and profitability of 94 listed Bumiputera-controlled companies in Malaysia for 2006 until 2012. The underlying theory is the trade-off theory of working capital and cash conversion cycle, and its components are used as measures for working capital management. Findings of the panel data regression reveal that inventory conversion period and receivable collection period are significantly negatively correlated to profitability. This suggests that the shorter the period, the higher the profitability of Bumiputera-controlled companies tends to be. However, the cash conversion cycle is significantly and positively correlated to profitability, suggesting that the longer the cash conversion period, the higher the profitability. The payable collection period is not significantly correlated to profitability. The findings of this study assert that in general, Bumiputera-controlled companies are relatively less efficient in its working capital management, as far as the comparison to previous related studies is concerned.

Keywords: Working capital management, trade-off theory, profitability, Bumiputera-controlled companies, Malaysia

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1. INTRODUCTION

Working capital management, which is the management of current assets and current liabilities, is a crucial component of any business and has been the focus of many empirical studies. Every business organisation aims to maintain a sufficient level of a current asset, especially the account receivable and inventory. At the same time, a business also aims to control accounts payable in such a way that it can fulfil its short-term commitments on time. In general, working capital is made up of securities, accounts receivable, cash and inventory, while net working capital the difference between current assets and current liabilities. Whenever the amount of current assets is higher compared to current liabilities, the company can meet its obligations easily (Khanqah *et al.*, 2011).

Numerous studies in various countries have examined the relationship between working capital and profitability. Among them are Gill *et al.* (2010), in the US; Dong & Su (2010), in Vietnam; Deloof (2003), in Belgium; and Lazaridis and Tryfonidis (2006), in Greece. In general, most of them found that working capital components such as cash conversion cycle is negatively related to profitability, verifying the trade-off theory which states that the longer cash conversion cycle reduces profitability. Several studies in other countries also recorded the negative relationship between those variables were (Saghir *et al.* 2011; Garcia & Martinez, 2007; Gul *et al.* 2013; Mansoori & Muhammad, 2012; Nimalathan, 2010; and Ray, 2012).

However, the studies by Gill *et al.* (2010), Ali (2011), Sharma and Kumar (2011), Ademola (2014), Abuzayed (2012), Baveld (2012), Rimo and Panbunyuen (2010), and Karadagli (2012) show a positive relationship between working capital and profitability. In contrast to the trade-off theory, companies manage to increase profitability with a longer cash conversion cycle, within a tolerable range. In Malaysia, the studies by Mohamad and Saad (2010) and Wasiuzzaman and Arumugam (2013) recorded mixed results with regards to the relationship between working capital components and profitability.

As a developing country aspiring to be a developed country, Malaysia is banking on its public-listed companies (PLCs) to propel the country's gross domestic product (GDP) to record an average annual growth rate of 7% into the foreseeable future. According to The Star Online report (2015), the number of Bumiputera-controlled companies is 132 or 14.4% of the PLCs in the Malaysian stock exchange. Therefore, it is important to investigate the role played by Bumiputera-controlled public-listed companies with regards to the working capital management and profitability. This research seeks to determine the relationship between working capital components and profitability of Bumiputera-controlled PLCs in Malaysia. The findings are expected to provide us with some understanding of the business performance as well as the management efficiency of those companies, and a comparison can be made to other companies. Also, the findings may be a useful input to policymakers in defending or revising specific policies.

Several researchers have previously examined the financial performance of Bumiputera-controlled companies. Marimuthu (2010) reports that the impact of the crisis and post-crisis periods on the performance of Bumiputera-controlled companies throughout 1996 to 2005 is evident, where the companies faced both short run and long run issues due to the financial crisis. Halim *et al.* (2014) look into the management issues and financial performance of Bumiputera construction firms. The findings show that, in general, the firms have an inadequate amount of capital to finance their projects, generate a small amount of profits, have high debt level, and are less efficient in managing their assets. Additionally, Aminudin (2000) analyses the corporate performance and ownership structure of Bumiputera and non-Bumiputera controlled companies listed on the KLSE from 1993 to the first quarter of 1997, just before the economic downturn. The results suggest that the ownership structure would not impact the performance of the accounting

profit of companies. In the study by Yatim *et al.* (2006), it was shown that Bumiputera-controlled firms have better internal corporate governance practices compared with non-Bumiputera firms.

In line with the discussion above, and to the researcher best knowledge, there is hardly any research that examines the relationship between working capital management and profitability of Bumiputera-controlled companies in Malaysia. Therefore, this study intends to address the gap in the literature by examining the relationship of working capital management and profitability of Bumiputera-controlled companies in Malaysia with the following research objectives. Specifically, the relationship between profitability and working capital components, namely, cash conversion cycle, inventory conversion period, receivable conversion period and payable conversion are examined.

2. LITERATURE REVIEW

This chapter reviews previous literature on the relationship between working capital management and profitability. In addition, it also frames out several issues about Bumiputera-controlled companies.

2.1 The trade-off theory

The trade-off theory is one the main theories which explain about working capital management whereby there is a trade-off between profitability and risk which is associated with the level of current asset and liabilities (Abuzayed, 2012). This is based on earlier work by Smith (1980) which signalled the importance of the trade-offs between the goals of liquidity and profitability. According to Raheman and Nasr (2007), increasing profits at the cost of liquidity can bring serious problems to the firm. Dittmar *et al.* (2002) indicate that when firms are liquid, they generate huge amount of net working capital which may reduce the level of profitability, and vice-versa, hence the negative relationship between liquidity and profitability.

2.2 Relationship between profitability and working capital management

As an indicator of firm performance, profitability is often measured using return on assets (ROA), which is calculated as the ratio of net income to total assets, and also return on equity (ROE), which is calculated as the ratio of net income to total equity. Many researchers have utilised both ROA and ROE as the dependent variable to proxy for the profitability of a firm (Ali, 2011; Bulin *et al.* 2016; Sin *et al.* 2017; Wasiuzzaman, 2015; Gill *et al.* (2010).

Other measurements for profitability include gross operating income (Yunos, et al., 2015), gross operating profit (Deloof, 2003; Lazaridis & Tryfonidis, 2006; Gill *et al.*, 2010), net operating profit (Usama, 2012; Mathuva, 2010) and return on sales (Ching *et al.*, 2011). However, ROA is the most common variable used for profitability and is thus used in this research as the dependent variable.

2.3 Working capital management

Working capital management comprises of the cash conversion cycle, average collection period, inventory turnover in days, net trading cycle, and average payment period of a firm (Raheman *et al.*, 2010). Cash conversion cycle (CCC) is the period between the payment for raw materials by a company and collection of payment from the customer. Based on the trade-off theory, firm profitability should be negatively related with CCC because

shorter CCC translates into either shorter production time and/or shorter collection period hence the possibility of reducing costs to increase the profit. Table 1 summarises the previous studies which have examined the relationship between WCM and profitability.

Table 1. Overview of previous studies on the relationship between WCM and profitability.

Variables	Country	Literature	Findings
Cash Conversion Cycle (CCC)	Developing country	Sin et al. (2017): Malaysian listed manufacturing companies from 2007 - 2012	positive
	Developed country	Lazaridis and Tryfonidis (2006): companies which were listed in the Athens Stock Exchange from 2001 - 2004	negative
Inventory Conversion Period (ICP)	Developing country	Albdwy et al. (2014): Malaysian Shariah compliance and non-Shariah compliance listed companies from 2009 - 2013	negative
	Developed country	Deloof (2003): Belgian non-financial firms from 1992 - 1996	negative
Receivable Collection Period (RCP)	Developing country	Wasiuzzaman (2015): Malaysian manufacturing firms from 1999 - 2008	negative
	Developed country	Mansoori and Muhammad (2012): 92 listed companies in Singapore from 2004 - 2011	negative
Payable Collection Period (PCP)	Developing country	Saghir et al. (2011): 60 textile firms from Karachi stock exchange from 2001 - 2006	negative
	Developed country	Deloof (2003): Belgian non-financial firms from 1992 - 1996	negative
Size of the firm (Size)	Developing country	Yunos et al. (2015): government-linked companies listed in Bursa Malaysia from 2003 - 2014	positive
	Developed country	Deloof (2003) - 1009 Belgian non-financial firms from 1992 - 1996	negative
Debt Ratio (DR)	Developing country	Sin et al. (2017): Malaysian listed manufacturing companies from 2007 - 2012	negative
	Developed country	Gill et al. (2011): American service and manufacturing firms which were listed in New York Stock Exchange from 2005 - 2007	positive
Sales Growth (SG)	Developing country	Sharma and Kumar (2010): 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) from 2000 to 2008	negative
	Developed country	Deloof (2003): 1009 Belgian non-financial firms from 1992 - 1996	positive

2.4 Related studies about Bumiputera-controlled companies

Previous studies on BCCs have examined the issues of corporate performance, ownership structure, corporate governance practices, financing and also IPO performance. Table 2 summarises previous studies which have looked at BCCs.

Table 2. Overview of previous studies on the Bumiputera-controlled companies in Malaysia

Authors	Focus of Study	Findings
Aminudin (2000)	This study looked into the corporate performance, and ownership structure of Bumiputera and non-Bumiputera controlled companies.	Performance of Bumiputera and non-Bumiputera controlled companies were equally competitive.
Dev <i>et al.</i> (2006)	Explored the IPO prices of Malaysia in the short run and long run.	Malaysia's IPO prices are lower compared to IPO in the developing countries.
Yatim <i>et al.</i> (2006)	The study looked into the performance of Bumiputera-controlled companies in the year 1986 to 2001 in paying higher audit fees due to the weaker governance practices.	Lower external audit fees are paid by the Bumiputera-controlled firms since their internal governance structures are relatively stronger than the non-Bumiputera firms.

Authors	Focus of Study	Findings
Marimuthu (2010)	Looking into the impacts of crisis and post-crisis periods which were considered from 1996 to 2005 of 33 Bumiputera-controlled companies which were listed on Bursa Malaysia	Bumiputera-controlled companies experienced difficulties for both short-term and long-term due to the financial crisis.
Halim <i>et al.</i> (2014)	Investigated the financial performance and management issues of Bumiputera construction firms.	The level of capital liquidity of the contractors on average was lower than the industry average, received small profits from construction projects, burdened with higher debt and was less efficient in managing their financial resources or assets.

3. RESEARCH DESIGN AND METHODOLOGY

A list of 94 Bumiputera-controlled companies was obtained from the book of “*Ikon Bumiputera PLC 2014-2015*”. Data of each company for 2006 until 2015 were collected from DataStream of UKM’s library. Analysis of the relationship for working capital management (WCM) and firm profitability was carried out using descriptive statistics, correlation analysis and regression analysis.

For the regression, the dependent variable is a return on asset (ROA) which is a measurement of profitability. ROA was also employed as the dependent variable by Garcia *et al.* (2007); Mansoori and Muhammad (2012); Anojan *et al.* (2013); Gul *et al.* (2013); Yunos *et al.* (2015); Wasiuzzaman (2015); Bulin *et al.* (2016) and Sin *et al.* (2017).

Table 3. Measurement of Variables and Definitions

Variable	Definition	Measurement
Return on Asset (ROA)	This is a measure of a firm’s profitability. It gauges how efficiently a firm uses its assets to produce income.	ROA = Net sales (operating profit)/Total assets (Deloof., (2008;) and Albdwy <i>et al.</i> , (2014))
Inventory Conversion Period (ICP)	This is the time (in days) taken required to convert inventory held in of the firm into sales	ICP = (Inventory/Cost of Sales) *365. (Gul <i>et al.</i> , (2013), and Albdwy <i>et al.</i> , (2014)).
Receivable Collection Period (RCP)	The time spent (in days) for the collection of cash from customers	RCP = (Trade Receivables/Net Sales) *365. (Gul <i>et al.</i> , (2013;), and Albdwy <i>et al.</i> , (2014)).
Payable Collection Period (PCP)	This refers to the time spent (in days) to pay to the suppliers of the firm	PCP = (Trade Payables/Cost of sales) *365. (Gul <i>et al.</i> , (2013;), and Albdwy <i>et al.</i> , (2014)).
Cash Conversion Cycle (CCC)	This is the period (in days) between the firm’s payment for materials and collection on its sales	CCC = ICP + RCP - PCP
Firm Size (SIZE)	The data for total assets are in the asset classification of a firm’s balance sheet assets	The logarithm of its total assets (Deloof, 2003; Wasiuzzaman and Arumugam, (2013); Gul <i>et al.</i> , 2013)
Sales Growth (SG)	The variation in its annual sales value concerning sales of the previous year	[(Sales t - Sales t-1)/Sales t-1] (Deloof, 2003; Wasiuzzaman and Arumugam (2013); Gul <i>et al.</i> , 2013; Nobanee, 2009)
Debt ratio (DR)	This is the degree to which a firm is utilising borrowed money	Total debt/total asset (Gul <i>et al.</i> , 2013; Wasiuzzaman and Arumugam, 2013).

For the independent variables, Cash Conversion Cycle (CCC) and its components are frequently employed to measure the working capital management (Deloof, 2003 and Zariyawati *et al.*, 2009). Many previous studies have shown that CCC had given significant results (Deloof, 2003; Gill *et al.*, 2010; Sharma & Kumar, 2011; Ali, 2011; Jacob, 2014;

Bulin *et al.*, 2016 & Sin *et al.*, 2017). The components of the cash conversion cycle are the inventory conversion period, trade receivable collection period and trade payable collection period. The control variables included in the study are firm size (Deloof, 2003; Sharma & Kumar, 2011; Yunos *et al.*, 2015), growth (Bottazzi *et al.*, 2001; Deloof, 2003; Cowling, 2004; Jang & Park, 2011), and leverage (Salim & Yadav, 2012; Gill *et al.*, 2010; Sin *et al.* 2017). Firm size is measured by total assets; growth is proxied by sales growth while leverage is measured by debt ratio.

The model specification of this study is adapted from Gul *et al.* (2013), and Charitou *et al.* (2010) as follows (from 2006 until 2015):

$$ROA_{it} = \beta_0 + CCC_{it} + ICP_{it} + RCP_{it} + PCP_{it} + SIZE_{it} + SG_{it} + DR_{it} + e_{it}$$

4. ANALYSIS OF RESULTS

4.1 Descriptive Statistics

Based on the descriptive statistics in Table 4, ROA has a mean value of 3.82% and standard deviation of 14.6%. The mean value of CCC is 154 days with a standard deviation of 218.8 days, indicating a wide variation of CCC among the BCCs. The CCC in this study is longer than that generated by other studies in Malaysia such as Zariyawati *et al.* (2009) and Zariyawati *et al.* (2016). This longer period is consistent with the study conducted by Halim *et al.* (2014), which reveals that, on average, the capital liquidity in Bumiputera companies is lower than the industry average. The average ICP is 156 days, with a standard deviation of 277.49 days. Similar to CCC, the ICP in this study is longer than the ICP reported by other studies in Malaysia such as Albdwy *et al.* (2014), and Misbah *et al.* (2015). This may indicate that BCCs are inefficient in managing their inventory.

Table 4. Descriptive Statistics

	Minimum	Maximum	Mean	Median	Std. Deviation
ROA (%)	-23.25	121.37	3.8177	2.2344	14.59062
CCC	-196.34	827.84	154.0740	104.8102	218.83603
ICP	.00	1542.20	156.0782	61.7344	277.48897
RCP	29.07	2525.57	217.2056	139.1880	309.09375
PCP	.44	2789.94	194.6169	85.4853	412.09326
SIZE	1.31	4.49	2.7111	2.7148	.63003
SG (%)	-17.22	449.06	20.1994	8.0366	57.03667
DR (%)	9.12	333.34	51.4968	45.9299	41.73552

*CCC, ICP, RCP and PCP are in days, while SIZE is in LN of Total Assets

The average time spent to pay to the suppliers (PCP) is 195days, with a standard deviation of 412.09. This is longer than PCP generated by other studies in Malaysia conducted by Albdwy *et al.* (2014), and Misbah *et al.* (2015). For RCP, the average time spent on the collection of cash from customers is 217.2 days, with a standard deviation of 309.09. Meanwhile, the mean RCP is 139 days, which is shorter than RCP in Misbah *et al.* (2015). For control variables, SIZE reports a mean of 2.71 (RM514.16 million), smaller rather than SIZE value generated by other studies in Malaysia like Wasiuzzaman and Arumugam (2013), and Yunos *et al.* (2015). The average sales growth is 20.2%, with a standard deviation of 57%, indicating a wide variation in sales growth among the BCCs. The average debt ratio is 51.5% of total assets, with a standard deviation of 41.74%, higher than the debt ratio generated by Zariyawati *et al.* (2016).

4.2 Correlation Analysis

The correlations of all variables are presented in Table 4.2 to determine the correlation between the CCC and its components (ICP, RCP and PCP), and ROA. Based on the correlation matrix, as expected, CCC is significantly correlated with ICP, RCP and PCP; and it also significantly correlated with the control variables, except sales growth (SG). CCC is also not significantly correlated with ROA. The strongest correlation recorded is between PCP and DR, 0.769, which is still below 90% level, indicating that there is no problem of multicollinearity among the variables in the study. This is further reinforced by the variance inflation factor (VIF) test which shows that the VIF for all the variables ranges from 1.1 to 4.4, indicating no multicollinearity. Meanwhile, the Durbin-Watson statistic is 2.03, showing that there is no problem of autocorrelation.

Table 4.2. Correlation Matrix

	ROA	CCC	ICP	RCP	PCP	SIZE	SG	DR
ROA	1	-.078	-.053	.040	.276*	-.103	.027	.447*
CCC		1	.542*	.461*	-.321*	.169***	.090	-.267*
ICP			1	.545*	.414*	.062	.127	.296*
RCP				1	.304*	-.060	.391*	.307*
PCP					1	-.234**	.034	.769*
SIZE						1	-.059	-.129
SG							1	.000
DR								1

*. Significant correlation at 0.01 level (2-tailed).

**. Significant correlation at 0.05 level (2-tailed)

***. Significant correlation at 0.1 level (2-tailed)

4.3 Regression Analysis

The F-statistics is significant, showing that the model is adequate for analysis and the R² of the regression is 33.7%, showing that on average, the independent variables can explain 33.7% of the variation in the ROA. The variables CCC and DR are positively and significantly related with ROA. This result is consistent with Sin *et al.* (2017), Bulin *et al.* (2016), Ademola (2014), Gill *et al.* (2011), Ali (2011) and Sharma and Kumar (2011). However, it is not consistent with Gul *et al.* 2013, Dong and Su (2010), Zariyawati *et al.* (2009), and Deloof (2003), whose studies reveal that CCC has a negative relationship with firm profitability.

Table 4.4. Regression results of the relationship between working capital management and profitability.

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-7.031	6.391	-1.100	.274
CCC	0.03939	.011	3.456	.001*
ICP	-0.028	.008	-3.426	.001*
RCP	-.013	.006	-2.023	.046**
PCP	.010	.007	1.466	.146
SIZE	-.731	2.147	-.340	.734
SG	.035	.025	1.390	.168
DR	.222	.049	4.475	.000*

*Note: R-squared 0.337; Adjusted R - squared 0.283; Prob (F-statistic) 0.000

The variable ICP is negatively and significantly related to ROA, implying that the performance of firms becomes higher when the number of days of inventory is lower. This result contradicts those by Soekhoe (2012), Uremadu *et al.* (2012), Sharma and Kumar (2011), and Mathuva (2010). However, it is consistent with Deloof (2003), Albdwy *et al.*

(2014), Gul *et al.* (2013), Dinku (2013), Mansoori & Muhammad (2012), Saghir (2011), and Garcia *et al.* (2007).

The variable RCP is positively and significantly related with ROA, and this is consistent with the findings in Deloof (2003), Wasiuzzaman (2015), Sin *et al.* (2017), Ademola (2014), Ali (2011), and Lazaridis and Tryfonidis (2006). However, it is not consistent with the findings in Abuzayed (2012), and Falope and Ajilore (2009). The variable PCP is not significantly related with ROA, similar to the findings reported in Sin *et al.* (2017), Yunos *et al.* (2015), Ademola (2014), Anojan (2013), and Gill, Biger and Mathur (2010). Among the three control variables, only sales growth is significantly related to ROA, and it shows a positive relationship.

5. CONCLUSION

The impact of working capital management on the profitability of 94 listed Bumiputera-controlled companies in Malaysia from 2006 to 2015 is investigated. Return on Assets is employed as the dependent variable, while the independent variables are cash conversion cycle, number of days of inventory, number of days of account receivable, and number of days of account payable. Three control variables, namely, firm size, growth in sales, and debt ratio, are also included.

The CCC is found to have a significant positive relationship with ROA, showing that CCC can be optimised to boost profitability. ICP is negatively associated with ROA, indicating that on average, the companies in the sample of the study are maintaining a low cost of storage to obtain higher profits. RCP is negatively related with ROA, indicating that companies will be more profitable if they speed up the process of collecting the account receivables. PCP is not significantly related to ROA. For the control variables, only sales growth (SG) is significantly related to ROA.

In general, when firms have low working capital, they tend to record higher return on assets. Based on the trade-off theory, profitability and liquidity of firms should be balanced. The importance of cash as a sustainable financial health indicator is not surprising given its significant role in business since the business must run efficiently and profitably. On the contrary, too much concentration on liquidity will affect profitability. Therefore, managers must be diligent in achieving the desired trade-off between liquidity and profitability to maximise the firm value. Furthermore, small firms should focus more on working capital management as they may have limited access to funding, and less efficient of financial prediction.

In general, consistent with various findings, Bumiputera listed companies are relatively less efficient in managing their assets. Therefore, it is recommended that policymakers and regulators reexamine specific relevant policies and incentives in order to improve the financial performance of Bumiputra PLCs in Malaysia. Future studies may want to compare between Bumiputera-controlled companies against non-Bumiputera-controlled companies in WCM and also other aspects such as capital structure and also long-term debt management.

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