

## **Working Capital Management and Performance of Sabah's Public Listed Firms**

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**Abstract:** *The fundamental aspect of this paper was to discuss how working capital management affects major firm's performance variables. The firm's performance in the context of this study was justified as profitability, cash conversion cycle, company size, current ratio, current assets to total assets, current liability to total assets, and debt ratio.*

*The scope of this study consisted of 22 Sabah's listed firms for the period from 2000 to 2012. This study was based on a pooled regression approach while Pearson's correlation was used to test the hypothesis. The empirical results showed that cash conversion cycle (CCC) was significantly related to profitability; however, CATAR, CLTAR, and CR did not show any significant relation with profitability. The results also confirmed that SIZE and LVRG were the important roles in profitability. Both variables were highly significant at 1%. In addition, the finding showed mixed results between working capital management and profitability. CATAR, CLTAR, and CCC showed negative relation with profitability while CR was at the opposite direction. Thus, a proper design of working capital management policy will ensure the firm's ability to operate effectively and efficiently at the optimum level as well as to enhance the firms' values.*

**Keywords:** *Firm's performance, profitability, Sabah listed companies, and working capital management.*

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### **1. INTRODUCTION**

WCM is the most renowned crucial decision-making process in discussing a firm's financial performance and survival profit. An optimal WCM is one of the main factors to boost a firm's business growth and an undeniable element that ensures uninterrupted flow of business cycle activities. The fluctuation between current assets and current liabilities which compose the working capital affects companies' profitability and at the same time shape the companies' liquidity. Thus, in order for a company to succeed, it is important for them to properly redefine and manage their working capital since many researchers have proven that WCM contribute positively WCM to the creation of the firm's value and enhancement of its profitability.

Companies' profitability will be affected prior to the struggle in maintaining a proper working capital level (Bhunia and Brahma, 2011). Different sectors of industries use different working capital management as their unique business operations are different from each other. The companies in specific industries might be using aggressive or conservative working capital policy depends on the nature of business of the companies. A company that uses aggressive working capital policy usually maintains a lower level of inventory, account receivables, and cash, and thus it will lower the cash that is tied up in current assets. The profitability level may increase by using this kind of policy; however the companies may be facing problems such as run out of cash and no immediate inventory to keep the business cycles moving.

Meanwhile, the companies that follow conservative working capital policy would be associated with larger cash and inventory levels but at the expense of profitability level whereas a company that prefers moderate policy working capital will treat a middle path between aggressive and conservative. There is no immediate benchmark to say that a company runs in certain working capital policy and it could only be done by comparing it with other company's working capital policy.

## 2. LITERATURE REVIEW

This segment highlights some studies that provide a solid base and insight on Asian public listed companies' working capital management and its components. Each of these studies contributes different faces of Asian working capital management and profitability issues in various countries and environment from different aspects.

The efficient liquidity management involves planning and controlling current assets and current liabilities in such manner that eliminate the risk of inability to meet due to the short-term obligations and avoid excessive investment in these assets (Eljelly, 2004). The relation between profitability and liquidity has been examined, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint-stock companies in Saudi Arabia using correlation and regression analysis. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio that affects profitability. The size of the variable was found to have a significant effect on profitability at the industry level.

Most of the empirical studies support the traditional belief about working capital and profitability in which reducing working capital investment would positively affect the profitability of a firm (aggressive policy) by reducing a proportion of current assets in total assets. Early studies outcomes from a sample of Japanese and Taiwanese firms (Wang, 2002) as well as Belgian firms (Deloof, 2003) have emphasized on how a healthy working capital management has a significant impact on the profitability of firms, equivalent to that, an increase in profitability by reducing the number of daily accounts receivable and reducing inventories. Shorter cash conversion cycle and net trade cycle are related to better performance of the firms.

In terms of analysing the significant correlations between efficient working capital management and creating shareholders values, a previous research, using a sample of US firms, has used net trade cycle (NTC) to measure working capital management with the intention to discover the relationship between efficient working capital management and the firm's profitability (Shin and Soenen, 1998). The outcome found a crucial significant negative relationship between NTC and profitability. However, Shin and Soenen (1998) outcome indeed shown an indicator that there was no statistically significant relationship between NTC and profitability within a specific industry. Similarly, in Raheman and Mohammad (2007) studied on 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years indeed have the same findings on the strong negative correlations between working capital management and profitability.

However, several previous studies have demonstrated a significant positive relationship between effective working capital management and firm's profitability. An early study has suggested an aggressive liquidity management in which controlling the cash conversion cycle would highly associate with huge profitability in several industries (Jose, Lancaster and Stevens, 1996). A recent micro study has used various variables to measure significant magnitude correlations between working capital management and profitability in Tehran Stock Exchange. This indicates that a firm can enhance its profitability through minimizing cash conversion cycle and the total debts to total assets ratio (Abbasali and Milad, 2012).

A regression analysis on a panel sample of 255 companies listed on Thailand Stock Exchange from 2007 to 2009 has showed an inverse relationship between operating profits, inventory conversion period, and receivables collection period. However, no effects have been identified on profitability by extending the payables deferral period. The findings also demonstrated that the industry characteristics have an impact on gross operating profits (Kulkanya, 2012).

## 3. DATA AND METHODOLOGY

### 3.1. Sabah Dataset

The dataset used in this study involved all public listed firms in Sabah that was listed on Bursa Malaysia. The sample of data used the annual report of 22 firms in the period of 2002 – 2013. The dataset used to measure working capital management and profitability set was developed and produced 254 observations for a period of 10 years. The publicly financial information was collected from each company's annual report listed on the Bursa Malaysia. In order to be included in the sample, the list of firms was gathered from New Sabah Times in which the firms are basically located

in Sabah for the whole period of study and those firms should not be delisted or merged with any other firms during the period study. The final sample was drawn from 22 companies from various industrial sectors. The data was retrieved from data stream database.

**3.2. Measurement of Dependent and Independent Variables**

Profitability was used as dependent variable as suggested by previous studies on corporate performance and working capital management [10]. The independent variables were cash conversion cycle (CCC), current ratio (CR), current asset to total assets (CATAR), and current liabilities to total assets (CLTAR). Return on assets was measured by dividing operating profit by total assets. CCC was measured by adding the average collection period to daily inventory and deducting average payment period. CATAR was measured by dividing current assets by total assets. The CLTAR was calculated by current liability by total assets. In this study, we also included current ratio to measure the traditional liquidity tools. It was defined by dividing current assets and current liabilities.

Various previous studies have used controlled variables to determine the opposite analysis of working capital management on firm's profitability (Eljelly, 2004; Rahemen and Mohammad, 2007; Gill, Biger and Mathur, 2010; and Lazaridis and Tryfonidis, 2006). In addition, SIZE (Natural logarithm of assets (SIZE) and LVRG (total debt divided by total assets) that was used as the proxy for leverage was included as the controllable variables. Proxies of dependent and independent variables studied are given in Table 1

**Table1.** Proxies for dependent and independent variables studied

Dependent Variables	Proxies
Profitability	Earnings before interest and taxes divided by total assets.
Independent Variables	Proxies
Cash conversion cycle (CCC)	Average collection period Plus daily inventory deduct average payment period.
Current ratio (CCC)	Current assets divided by current liabilities.
Current asset to total Assets (CATAR)	Current assets divided by total assets.
Current liabilities to total assets firm size (SIZE)	Currents liabilities divided by total assets Natural Logarithm of assets.
Leverage (LVRG)	Total debt divided by total assets.

**3.3. Empirical Model**

The regression model was used to test the working capital management on profitability of the firms by applying panel data regression analysis. The regression equations are as follows:

$$\text{Profitabilty} = \alpha + \beta_1 (CCC) + \beta_2 (CATAR) + \beta_3 (CLTAR) + \beta_4 (CR) + \beta_5(SIZE) + \beta_6 (LVRG) + \varepsilon$$

Where;

CCC = Cash conversion cycle

CATAR = Current assets to total assets

CLTAR = Current liabilities to total assets

CR = Current ratio

SIZE = Firm size

LVRG = Leverage

Four hypotheses were formulated to cater pooling regression model. Independent variable has no effect on the profitability of Sabah listed firms, and conversely the independent variable has affected the profitability of Sabah listed firms. Specifically as follows:

Ho1: There is no relationship between efficient working capital management and profitability of Sabah listed firms

H1: There is a relationship between efficient working capital management and profitability of Sabah listed firms

Ho2: There is no relationship between liquidity and profitability of Sabah listed firms

H2: There is a relationship between liquidity and profitability of Sabah listed firms

Ho3: There is no relationship between size and profitability of Sabah listed firms

H3: There is a relationship between size and profitability of Sabah listed firms

H04: There is no relationship between LVRG and profitability of Sabah listed firms

H4: There is a relationship between LVRG and profitability of Sabah listed firms

### 3.4. Result and Discussion

Table 2 presents descriptive statistics for the variables used in this study. During the period of analysis, these were generally the small firms with return on assets around 13% with standard deviation of 18% and, only 38.5% of their liabilities were taken up by debt on average. It is all noteworthy that the average current ratios of 4.274 showed that the firms were able to meet its short-term obligation and relied mostly on short-term financing. Sabah listed firms also have an average of 159 days of cash conversion cycle used as the proxy to check the efficiency of managing working capital. All variables were calculated based on book values.

**Table2.** Descriptions and summary statistics of regression variables

Variables	Minimum	Maximum	Mean	Std. Deviation
Profitability	0.0224	0.8917	0.1306	0.1838
CATAR	0.0010	1.0000	0.3520	0.2260
CLTAR	0	14.4	0.286	.9659
CR	.10	215.5	4.274	16.4716
CCC	-575.35.08	978.9	159.588	211.3434
LVRG	.0	3.6	.385	.3900
SIZE	4.4429	19.5034	12.9528	2.5450

Table 3 displays the Pearson correlation coefficients of the variables used to measure the impact of working capital management on profitability, proxy by return on assets. The correlation of coefficient shows a significant positive relation between profitability and size. It shows that size is associated with the increase of firms' performances. We found that there was a positive relation between all measured working capital management and profitability except for CATAR. This means that if a firm is able to increase its liquidity, it can enhance the firm's profitability and will ultimately create the shareholder value. This finding is also consistent with the traditional belief which shows a positive relation between current ratio and profitability as found in the works of Petersen and Rajan (1997) and as well in early studied by Niskanen and Niskanen (2006). The positive relationship between CCC and profitability implies that a firm with better profitability has longer cash conversion cycle. A firm with more profitability is more affordable to expand trade credit to their customers.

**Table3.** Regression analysis for Sabah listed firms

Variable	Coeff.	t	p	Tol.	VIF
$\beta_1$	-46.57	-6.924	0.000		
CATAR	-4.774	-.778	0.437	.564	1.774
CLTAR	-1.054	-.902	0.368	.854	1.175
CR	.026	.383	0.702	0.840	1.191
CCC	-0.14	2.563	0.011***	0.831	1.203
LVRG	7.970	2.560	0.011***	0.735	1.360
SIZE	3.168	7.129	0.000***	0.848	1.180
R <sup>2</sup>	0.455				
F-Value	10.770				
p-Value	0.000				
N	254				

**Note:** Dependent variable: Profitability; \*\*\*, \*\*, and \* depict significance at 1%, 5%, and 10% level respectively.

The empirical results from the study found that working capital components such CATAR, CLTAR, and CR were not significantly related to profitability for Sabah listed firms in Malaysia. The study revealed that only cash conversion ratio (CCC) as working management tools is statistically significant at 1% level, and thus in line with prior research by Rahemen and Mohammad (2007) where CCC has been revealed to significantly affect profitability magnitude.

Conceding that, firms have to ensure shorter period for creditors payments and shorter cycle for cash conversion to maintain good profitability. Cash conversion cycle describes the efficiency in managing working capital, and thus, with shorter cycle, the firms are able to review its current policy in meeting companies' strategies and profitability in order to ensure the business cash flow are intact. Based on Table 3, CLTAR and CCC were found to relate negatively to profitability. Thus, this finding is relatively related to previous studies such as Shin and Soenen (1998)., and Nor Edi Azhar and Noriza (2010) which have enlightened why firms may not employ external financing as the results of less borrowing capacity and may lead to positive return of the firms. Additionally, this study showed CATAR was negatively significant with profitability and demonstrated any increase in profitability can be explained by the CATAR support as performed in previous study (Nor Edi Azhar and Noriza, 2010; Nazir, 2009) on a firm's potential to generate profit through relying more on current assets whilst ensuring to meet its short-term obligation in maintaining daily requirements of current asset to bypass severe profitability effect.

On the other hand, controllable variables like SIZE and LVRG were certainly significant with profitability. The study showed that both variables have a positive coefficient as the ratio is directly proportional to firms' profitability. However, a previous study has generated mixed result for these two variables where profitability correlated positively significant with SIZE but negatively significant with LVRG (Raheman, Qayyum and Afza, 2011). This implies that increasing or decreasing both variables will likely affect the firms' profitability significantly. The result presented an adjusted R<sup>2</sup> of 45.5% which indicated that nearly 46% of the dependent variables able to explain the degree of variations in Sabah public listed company's profitability. Another feature was F-values of regression model which was found to be statistically significant, whereas the test that showed VIF was less than 10 explained the absence of multicollinearity problem within the variables.

#### 4. CONCLUSIONS

In this paper, we determined the relation between working capital management with firm's performance using 22 Sabah listed firm in Malaysia in the period between 2000 and 2013. The empirical results showed that cash conversion cycle (CCC) was significantly related to profitability, however, CATAR, CLTAR, and CR did not show any significant relation with profitability. The results also confirmed that SIZE and LVRG are both an important variable when mirroring on the element of profitability as the result showed both variables contributed high significant at 1% of profitability. In addition, this micro study demonstrated the mixed results of correlations between working capital management and profitability whereas some independent variables such as CATAR, CLTAR, and CCC showed negative relation with profitability, and CR indicated an opposite direction. Thus, it is suggested that any firms regardless of size are obligated to focus on appropriate design of its working capital management policy in order to operate effectively and efficiently aiming for optimum level as well as enhancing its values.

Future studies can use sensitivity analysis to further strengthen the relationship between working capital management and profitability since current study merely used simple linear regression analysis. Besides that, the current study used basic variables for working capital management to compare between companies. Other than the current variables used, future research might add few other variables and study the degree of aggressiveness of working capital management in different companies. Adding to that, future study can opt to study different working capital management policies across different economic sectors as this section is still left open for further study in Malaysia. Proxy for profitability can be expanded as well to include return on asset, return on equity, return on capital employed, and Tobin's-q as the outcome of the research can be viewed from many aspects as each represent different angle of view of companies' performances.

#### REFERENCES

- [1] Bhunia A. and Brahma, B. "Impact of liquidity management on profitability", *Asian Journal of Business Management* Vol. 3, no. 2., pp. 1087-171, 2011.
- [2] Eljelly, A. "Liquidity-profitability tradeoff: an empirical investigation in an emerging market". *International Journal of Commerce and Management*. Vol.14 no. 2, pp.48-61, 2004.
- [3] Wang, Y.J. "Liquidity management, operating performance, and corporate value: Evidence from Japan and Taiwan". *Journal of Multinational Financial Management*. Vol. 12, pp: 159-169., 2002.

- [4] Deloof, M. “Does working capital management affects profitability of Belgian Firms?”. *Journal of Business Finance and Accounting*. Vol. 30 no. 3-4, 0306-686X, 2003.,2003.
- [5] Shin, H H and Soenen L. “Efficiency of working capital and corporate profitability”. *Financial Practice and Education.*, Vol.8, no. 2, pp. 37-45., 1998.
- [6] Raheman, A and Mohammad Nasr. “Working capital management and profitability- case of Pakistani firms”. *International Review of Business paper*. Vol. 3 no. 1., pp: 279-300, 2007.
- [7] Jose, M. L., C. Lancaster, and J. L. Stevens, “Corporate returns and cash conversion cycles”. *Journal of Economics and Finance.*, vol. 20 no. 1., pp: 33-46., 1996.
- [8] Abbasali P., and Milad E. 2012, “Impact of working capital management on profitability and market evaluation: Evidence from Tehran Stock Exchange., *International Journal of Business and Social Science*. vol. 3., no. 10., pp:311-316. 2012.
- [9] Kulkanya., N., “Effects of working capital management on the profitability of Thai listed firms”, *International Journal of Trade, Economics and Finance*. Vol. 3, no. 3.,2012.
- [10] Nor Edi Azhar, M. & Noriza, M.S. “Working capital management: the effect of market valuation and profitability in Malaysia”. *International Journal of Business and Management.*, vol 5, no. 11., 2010.
- [11] Gill, A., Biger, N. & Mathur, N., “The relationship between working capital management and profitability: evidence from The United States”. *Business and Economics Journal.*, pp: 1-9., 2010.
- [12] Lazaridis I & Tryfonidis, D. “Relationship between working capital management and profitability of listed companies in the Athens stock exchange”. *Journal of financial Management and Analysis*, Vol.19, no. 1., pp 26-35., 2006.
- [13] Nazir M.S, “Impact of working capital aggressiveness on firms’ profitability”. IABR & TLC conference proceedings, San Antonio, Texas, USA., 2009.
- [14] Petersen M.A and R.G Rajan. “Trade credit: Theory and Evidence”. *Review of Financial Studies*, Vol. 10 no.3., pp 661-691., 1997.
- [15] Raheman, A., Qayyum, A. & Afza, T. “Sector-wise performance of working capital management measures and profitability using ratio analysis”. *Interdisciplinary Journal of Contemporary Research in Business.*, Vol 3. No. 8, 2011.
- [16] Niskanen, J and Niskanen, M., “The determinants of corporate trade credit policies in bank-dominates financial environment: The case of Finnish small firms”. *European Financial Management*. Vol 12, no.1., pp81-102. 2006

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