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An Assessment on Determinant of Working Capital Management from Malaysian Public Listed Companies

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Abstract

This study investigates the practice of Working Capital Management (WCM) in Malaysian context, particularly in Malaysian public listed companies. Eventually, determining the important factors affecting working capital management would able managers to manage working capital efficiently and effectively. As for this purpose, a study of 150 public listed companies from 7 different sectors that were listed in Bursa Malaysia Main Market covering the period of 2002-2011 was undertaken. This study used cash conversion cycle (CCC) and working capital as a proxy for working capital requirement (WCR) while debt, capital expenditure, free cash flow, gross domestic product and firm growth are used as the determinant variables. In conclusions, applying correlations and Pooled Ordinary Least Square Regression analysis, the result shows that there are significant associations between working capital and its determinants factors.

Keywords: Cash Conversion Cycle, Working Capital Requirement and Capital Expenditure

Introduction

The current squeeze on cash and credit is threatening the survival of many businesses in all over the world primarily in Malaysia as it's considered the sources of company's working assets and the liabilities or collectively referred to as working capital. Management of short-term assets and liabilities necessitate a careful investigation since its plays an important role for the firm's profitability and liquidity (Nazir & Afza, 2009). Above all, efficient management of working capital is a fundamental part of the overall corporate strategy Padachi (2006) and is expected to contribute positively to the creation of a firm's value (Nazir & Afza, 2009). Extensive empirical researches on WCM was carried out worldwide by the academia in order to hypothesize firms' performance, yet the understanding on working capital management in Malaysian context, particularly Malaysian listed companies, is not explicit Darun (2008) given that the divergence in the environment between other countries. For this purpose, firm manager should know the determinants of working capital management which could be consisted of internal factor, external factor or even both (Zariyawati et al., 2010). Hence, it

can influence the company's decision regarding the optimal level of current assets and current liability (Nakamura and Palombini, 2012). Since earlier study was built on western data and specific research studies exclusively on the impact of working capital on firm value and profitability of companies in Malaysia are scanty, thus this study is conducted with an attempt to bridge the gap in the literature by offering empirical evidence to the extent of which result in Malaysia would be parallel to past studies. Considering the potential contribution of WCM to corporate performance which eventually related to the economy of Malaysia, therefore, the objective of our study is to discover the factors that influence the working capital management of public listed companies in Malaysia.

Literature Review

The importance of WCM is not new in finance literature and review of prior literature reveals the determinant factors of working capital management by using different variable selection for analysis. However, there are no robust and widely accepted theories about working capital management Nakamura and Palombini (2012) and as indicate by (Asmawi & Faridah, 2012) the Pecking Order Theory originate by Myers & Majluf (1984) is the nearest pertinent theory explaining the company's optimal capital structure. This theory highlights the firm's preference in financing their business using retained earnings as compared to debt, short-term debt over long-term debt and debt over equity. According to Nakamura and Palombini (2012), the Agency Theory pioneered by Jensen & Meckling (1976) is also one of the factors that have a significant influence towards firm's decision making on working capital level considering conflict of interest between managers and shareholders.

The factors that impact working capital management was investigated by Chiou et al (2006) using 19,180 firm/quarter data extracted from Taiwan Stock Exchange. By using the net liquid balance and working capital requirement as measurement of working capital management, this study found evidence on the effects of operating cash flow and debt ratio towards the firm's working capital management. Further, Appuhami (2008) using data collected from listed companies in the Thailand Stock Exchange, from 2000 to 2005 scrutinize the impact of firms' capital expenditure on working capital management. The research found a negative relationship with capital expenditure, and significant positive substantiation between working capital requirement and operating and finance expenditure. Study by Nazir & Afza (2009) for 204 manufacturing firms from 16 industrial groups listed at Karachi Stock Exchange, Pakistan, for a period of 1998-2006 found evidences that operating cycle, leverage, ROA and Tobin's Q significantly influenced the working capital requirement. Study in US corporations by Hill et al (2010) disclosed positive relationships with the operating cash flow, and negatively correlated to the financial distress and market to book ratios. Whereas Gill (2011) indicated no significant relationship between working capital requirement with a debt ratio and operation cash flow using a sample of Canadian company.

In Malaysian context, Zariyawati et al (2010) investigated the determinants of working capital determinants on 119 selected firms from a period of 2000-2006. This study used panel data analysis and found evidenced that firm size, growth opportunity, economic growth and inflation have significant influence towards working capital management. Further, they indicate that optimal working capital management could be achieved by firms that able to properly manage the trade-off between profitability and liquidity on working capital component. Asmawi & Faridah (2012) used Partial Least Square method to observe the validity factors that determine the working capital among 285 Enterprise 50 (E50) firms in Malaysia from 2006 to 2008. Their study that used working capital as dependent variable, and

other factors such as growth of the firm , profitability, debt , size and industry as independent variable concluded that the identified latent variables i.e. the determinant factors of working capital is valid for testing.

Methodology of Research

The study utilized secondary data retrieved from Bloomberg’s Database for a sample of 151 randomly selected listed companies in Bursa Malaysia main Board from seven sectors for a period of 10 years (2002 -2011). Ratio analysis was chosen as a performance measurement and indicators since this analysis provides methods for assessing the financial strengths and weaknesses of the firm’s performance using information found in its financial statements. For dependent variables, this study used cash conversion cycle (CCC), and working capital requirement (WCR) as a proxy for working capital which was widely used by other study on working capital i.e. (Zariyawati et al., 2010; Nakamura and Palombini, 2012; Appuhami, 2008 & Mohamad and Saad, 2010). The CCC denotes the length of time (days) required to convert a dollar invested in current assets into cash through sales. It was compute by adding the average collection period to the average inventory period and subtracting the average payment period. Firms with shorter CCC are said to be more efficient in managing the working capital. For independents variables, this study used debt followed.

The relation between the variables has been examined using Pooled Ordinary Least Square Regression analysis. This regression results is implicitly assuming that the coefficients (including the intercepts) are the same for all the individual company two alternate hypotheses was developed to find the determinant factors for working capital requirements per mention below:

Hypothesis H1: There is an association between CCC and all determinant factors.

Hypothesis H2: There is an association between WCR and all determinant factors.

The regression models to be estimated to test the hypothesis are:

$$CCC_{it} = \beta + \beta_1 DEBT_{it} + \beta_2 CAPEX_{it} + \beta_3 FCF_{it} + \beta_4 GDP_{it} + \beta_5 GROWTH_{it} + \beta_6 IND_{it} + \epsilon_{it} \quad (1)$$

$$WCR_{it} = \beta + \beta_1 DEBT_{it} + \beta_2 CAPEX_{it} + \beta_3 FCF_{it} + \beta_4 GDP_{it} + \beta_5 GROWTH_{it} + \beta_6 IND_{it} + \epsilon_{it} \quad (2)$$

Where:

i	= i,...,N, refers to the company
t	= t,..., T, refers to time
CCC	= Cash Conversion Cycle
WCR	= Working Capital Requirement
DEBT	= Debt Level
CAPEX	= Capital Expenditure
FCF	= Free Cash Flow
GDP	= Gross Domestic Product
GROWTH	= Firm Growth
IND	= Industry Dummy
B	= Regression Parameter
ε	= Residual Error

Result and Discussion

The correlations between the variables are reported in Table 1. Results indicate no multicollinearity problems since the correlations are relatively low. According to [18], multicollinearity problems exist when the correlations value exceeded 0.80. The correlations results for CCC signify positive coefficient with WCR (+ 0.097), CAPEX (+0.221) and INDUSTRY (+0.073), but positive insignificant with GDP (0.014) while negative coefficient with DEBT (-0.057) and FCF (-0.154) 0.133). The correlations results for WCR indicate negative coefficient with DEBT (-0.300), CAPEX (-0.180) and IND (-0.064) but negative insignificant with GDP (-0.047), whereas positive correlations with FCF (0.289). This indicates that alternative hypotheses 1 and 2 can be accepted implying significant correlations exist between working capital components and its determinants factors.

Table 1
Correlations Analysis

Variables	Correlation						
	CCC	WCR	DEBT	FCF	GROWTH	CAPEX	GDP
WCR	.097**	-					
DEBT	-.057*	-.300**					
FCF	-.154**	.289**	-.076**				
GROWTH	-.018	.026	.002	-0.032			
CAPEX	.221**	-.180**	-.048	-.116**	.005		
GDP	.014	-.047	.042	-.102**	0.73**	.017	
IND	.073**	-.064*	-.103**	-.116**	.025	.062*	0.000

*** Significant at 1% level ** Significant at 5% level * Significant at 10% level

According to Table II, the independent variable for DEBT shows a significant negative relationship with CCC and WCR at 1% significant level. The result for CCC is corroborate with the study by [5] which suggested that companies with higher debt level seek to expand payment terms with suppliers and will have higher credit terms. Whereas, result for WCR similar with the study done by (Abbadi and Abbadi, 2013). As indicate by Abbadi and Abbadi, (2013), it's in conformity to Pecking Order theory which proverb that firms with increasing leverage need to provide more attentions in reducing the capital that is tied to current assets, thus high leverage firm exhibit lower working capital requirements . The regression results for CAPEX indicate positive significant association with CCC and negative significant relations with WCR. However the result is contradicted towards the study found by (Mansoori and Jorjah, 2012). As depicted by the results of FCF, the analysis signify negative significant associations with CCC which quite consistent with earlier studies done by Nakamura and Palombini (2012); Chiou et al (2006); Mansoori and Jorjah (2012) among others indicating that an expansion in the firm's cash flow can be achieved by full utilization of working capital. While result for WCR depicted positive significant relations with FCF all at 1% confident level and confirm with the study by (Abbadi and Abbadi, 2013). As for GROWTH and GDP is concern in relations with the working capital requirement this study indicate insignificant result with CCC and WCR. The results were contradicted from the study done by Zariyawati et al (2010) which found positive significant relations between economic growth (GDP) and CCC. Result for GDP is similar with Nazir & Afza (2009); Lotfinia et al (2012); Abbadi, and Abbadi (2013) which find no evidence on the association between GDP and working capital requirement. The regression results support hypotheses 1 and hypotheses 2 as depicted in table II, the F

statistics is substantiated at the 1% significant level for CCC(19.122) and WCR(59.868) implying the null hypotheses that the regressions coefficients are all zeros can be rejected at 1% level of significant .Though, the adjusted R square statistically shows weak relationships for the two hypotheses tested, however the estimated regressions is efficient for predictions and all hypotheses can be accepted implying that there are associations between the selected determinant factors for working capital requirements of listed companies in Malaysia.

Table 2

Empirical Results on the Determinants of Working Capital

Independent Variables	Dependent Variables	
	CCC	WCR
DEBT	-2.114 (0.035)**	-12.589 (0.000)***
CAPEX	8.009 (0.000)***	-6.932 (0.000)***
FCF	-5.125 (0.000)***	10.204 (0.000)***
GDP	0.050 (0.961)	-0.408 (0.683)
GROWTH	-0.978 (0.328)	1.622 (0.105)
IND	1.622 (0.105)	-2.451 (0.014)*
N	1,510	
Adjusted R2	0.067	0.19
F value	19.122 (0.000)	59.868 (0.000)

*** Significant at 1% level ** Significant at 5% level *Significant at 10% level

Conclusions

This paper tries to find the factors contribute towards working capital from Malaysian perspective. The study employed two model specifications in order to test the postulated hypotheses, using working capital measure of CCC and WCR along with the determination factors for 151 selected listed companies in Bursa Malaysian main Board for the period of 2002 until 2011. On the basis of findings of the research, it can be conclude that there are significant relations between selected determinants factors with the firm’s working capital management as our results disclosed both positive and negative association .The study reveals that out of five components selected for the study, DEBT shows negative significant relationships with CCC and WCR. Whereas, CAPEX shows positive significant with CCC and negative significant with WCR while FCF shows negative significant with CCC and positive significant with WCR. In conclusions, applying correlations and regression analysis, the result shows that there are significant associations between working capital and its determinants factors. Nevertheless, it was hope that the result can contribute to the body of knowledge by identifying the determinants factors of working capital management from Malaysia perspective. Although all the alternate hypotheses are support by the analysis, however, results of the present study are in contradiction to some earlier studies on the issues which could comprise an area of future research. It was recommended that the study is further

improved with more sample size, different variables for working capital practices and also other external variable which could confer with a strong relationship between the variables and help to uncover the better determinants factors towards efficient working capital management in Malaysia perspectives. Thus this study is left for the future to be further explored.

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