THE RELATIONSHIP BETWEEN WORKING CAPITAL AND FIRM PERFORMANCE IN MALAYSIA

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ABSTRACT

The study investigated the relationship between working capital and firm performance of 272 listed firms in Malaysia for 2012 – 2016. The dependent variable to measure firm performance is Return on Asset (ROA). The independent variable used in this research are Average collection period (ACP), Inventory conversion period (ICP), Average payable period (APP), Cash conversion cycle (CCC) and Current Ratio (CR). Findings of the panel data regression reveal that Average collection period and Inventory conversion period are significantly negatively correlated to firm performance. This suggests that the shorter the period, the higher the firm performance among firms in Malaysia. However Average payable period, Cash conversion cycle and Current ratio is significantly and positively correlated to firm performance. This suggests that the longer the firm delays payment to creditors, the higher will be firm performance through the utilization of opportunity cost. The findings of this study assert that in general, Malaysian firms are seems to make short term decision when it comes to managing their working capital and cash cycle. Among all the components of working capital, firm choose to stretch their payables. For future studies, researchers are recommended to look into the requirement of working capital based on industry and examine its impact on firm performance.

Keywords: Working capital, Firm Performance, Average Collection Period, Inventory Turnover Period, Account Payable Period, Cash Conversion Cycle, Current Ratio, Bursa Malaysia

ABSTRAK

Kajian ini menyiasat hubungan antara modal kerja dan prestasi 272 firma yang disenaraikan di Malaysia untuk tahun 2012 - 2016. Pembolehubah bergantung untuk mengukur prestasi firma ialah Pulangan atas aset. Pembolehubah bebas yang digunakan dalam penyelidikan ini ialah tempoh kutipan akaun penghutang,tempoh perolehan inventori, tempoh bayaran akaun pemiutang, kitaran tunai dan Nisbah Semasa.. Penemuan regresi data panel mendedahkan bahawa tempoh kutipan akaun penghutang dan tempoh perolehan inventori berkorelasi negatif secara signifikan terhadap prestasi firma. Ini menunjukkan bahawa tempoh yang lebih singkat, semakin tinggi prestasi firma di kalangan firma di Malaysia. Bagaimanapun, tempoh bayaran akaun pemiutang, kitaran tunai dan nisbah semasa adalah signifikan dan berkorelasi positif kepada prestasi firma. Ini menunjukkan bahawa semakin lama syarikat menangguhkan pembayaran kepada pemiutang, semakin tinggi prestasi yang kukuh melalui penggunaan peluang kos penangguhan bayaran. Penemuan kajian ini menegaskan bahawa secara umum, firma-firma Malaysia nampaknya membuat keputusan jangka pendek apabila mengurus modal kerja dan kitaran tunai mereka. Di antara semua komponen modal kerja, firma memilih untuk meregangkan pemiutangnya. Untuk kajian masa depan, para penyelidik disarankan untuk melihat keperluan modal kerja berdasarkan industri dan mengkaji kesannya terhadap prestasi firma.

Kata kunci: Modal Kerja,Prestasi Firma,Tempoh kutipan akaun penghutang, Tempoh perolehan inventori, Tempoh bayaran akaun pemiutang, Kitaran tunai and Nisbah semasa.

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LIST OF ABBREVAITIONS

Average Collection Period	ACP
Inventory conversion period	ICP
Account Payable Period	APP
Cash Conversion Cycle	CCC
Current Ratio	CR
Working Capital Management	WCM
Return on Asset	ROA
Bursa Malaysia	BM
Account Payable	AP
Account Receivable	AR

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Current uncertainties in the global economy and financial markets are putting pressures on companies and their supply chains. In these times of economic uncertainty and reduced access to credit, working capital remains an obvious and key source of finance, it is the cheapest source of cash and it is available to most businesses. The fundamental principles of working capital are clear, which are to reduce inventory and receivables whilst increasing payables balances. Companies which excel in their management of working capital will have a real competitive advantage. Working Capital Management initiatives release working capital and increase liquidity which companies can use for strategic investments or debt reduction. In addition, it enhances profitability due to an efficient improvement in the processes and a reduction in capital cost. Unfortunately, many companies lack a systematic approach to managing their working capital and treat the issue in an ad-hoc and decentralized way. As such they find it hard to optimize working capital. (PwC's Malaysia report, 2018/19)

Business plays a vital role in the capital formation of a country and people consider it as the life blood of a growing economy. Therefore, it is very important to manage business effectively and efficiently. One of the major issues encountered by firm managers today is not just the procurement of funds but also

their meaningful deployment to generate maximum returns. Working Capital Management (WCM) is an important corporate financial decision since it directly affects the profitability of the firm. Working capital management is efficient for firms, as major part of assets is composed of current assets especially inventory and trade receivables, (Arunkmar and Ramanan, 2013)

Working capital explains the efficiency of firms in managing their liquidity level without placing the firm in shortage or excessive availability of fund without a proper investment or usage of capital availability. In other words how much of current asset are available to cover current liability. In other perspective working capital largely point out the capacity of firms in meeting its short term obligation through a proper management of its short term fund and investment. The proper management of liquidity components will secure the companies from the risk of falling into debt and the same time help the firms to maximize the shareholder value and return on asset. Devoting into working capital management has a price, it can be either the cost of finance or the opportunity cost of losing the best next option mainly because the fund is tied up and unobtainable for current usage. The tied up fund basically refers to the outstanding cash from debtors which is the account receivable of the firms. The components of short term operating of firms which is categories as liquidity components is trade receivable, trade payable, and goods held for sales(Ross, Westerfield and Jordan, 2010)

Working capital management involves managing the firm's inventory, receivables and payables in order to achieve a balance between risk and returns and thereby contribute positively to the creation of a firm value. Excessive investment in inventory and receivables reduces the profit, whereas too little investment increases the risk of not being able to meet commitments as and when they become due. The working capital includes all the items shown on a company's balance sheet as short term or current assets, while net working capital excludes current liabilities. These measures are considered useful tools in accessing the availability of funds to meet current operations of companies. Therefore, the importance of maintaining an appropriate level of working capital and its contribution to business survival is a concept that should be understood by every company (Harris, 2005).

In working capital management, the ratio percentage or outcome of ratio measurement varies by industry sector. A ratio of working capital below 1.0 generally shows an unhealthy management of working capital. It can be concluded that any firm which has a working capital ratio below 1 has major problem in meeting its short term obligation. The average preferable result of ratio is above 1.0 or equal to 1.0. The range of ratio from 1.0 to 2.0 is considered satisfactory. Some firms may have working capital above 2. Even though it shows the firm has excess of fund in current asset to cover every RM1.00 in current liability, financially a working capital above 2.0 indicates that the firm is not utilizing the available short term capital for future investment. According to Afza

and Nazir (2007), a firm has two options to choose in the working capital strategy. The options are flexible working capital strategy or aggressive working capital management. Managers should understand the advantages and disadvantages of applying both strategies before implementing them in their operations.

Based on Mansoori and Muhammad (2012), the main target of working capital is to maintain enough cash flow or fund to run the business day to day activity efficiently, so that it will lower the exposure of firm failing to fulfill its short term debt. Managers should be careful in investing the fund in working capital. Investment in working capital generates opportunity cost for firm. Opportunity cost basically relates to lagging payment to settle account payable, thus it reduces the profitability margin and it will affect the cash flow of the firm in future.

According to several scholars (Ding, Guariglia & Knight, 2013; Kieschnick, LaPlante & Moussawi, 2013; Banos-Caballero, Garcia & Martinez, 2014), a well-managed working capital is important because it can positively influence firm performance and therefore it becomes a priority for corporation's management and the board of directors. The empirical evidence by numerous studies (Deloof, 2003; Howorth & Westhead, 2003; Afza & Nazir, 2007; Garcia & Martinez, 2007; Arnold, 2008) have shown that quantifying working capital of a business is somewhat difficult due to the differences in business models and also varying risk levels in different economic conditions. In practice, working capital differs across

firms by the nature and size of the business, production level, operating cycle, credit policy of the business and other factors (Mandal, Mahavidyalaya & Goswami 2010). Critically, any decision making made on working capital will have a direct impact on the trade-off between firm profitability and risk (Ranjith, 2008; Madhou, 2011; Abbadi & Abbadi, 2013).

Based on a study by Nimalathasan (2010) working capital management aims at ensuring that firm is able to operate its business activities with enough fund to meet its maturing current debts and expenditures. Mostly all firms are engaged in a situation of making very crucial decisions on their day to day operation activities, which refer to the working capital management process including short term obligation and firm activities. Deficiency in managing short term activities will lead firms to the risk of facing solvency. A poor management of short term requirement and operation can easily lead the firm in a state of bankruptcy. It will also affect the goal of a firm in maximizing the shareholder wealth and increase the price of existing common stock.

According to Deloof (2003), working capital refers to the management of firm liquidity. Basically it refers to the operation activity of a firm which involves short term asset and short term liability. It also refers to the capability of firms in fulfilling its short term obligation. The control over current asset and current liability is important as its represents the significant percentage of operating

activities of the firm which directly results the cash generation activities from operating activity of firms. This is also supported by Alshubiri (2011) who concluded that inappropriate controlling of working capital will result in shortage of cash availability and it will somehow lead the firm into more debt to meet its short term needs. The action of managers obtaining long term debt through capital structuring to meet short term obligations will directly affect the profitability of firm. This move by firm will decrease the operating income as firms are obligated with higher level of finance cost payment, thus exposing them to higher level of leverage.

Working capital management has so much importance in all the sectors of economic activity due to various reasons. Working capital evaluates the success and failure of the business, and it is the back bone of every enterprise (Meigs and Meigs). More than half of the total assets of firms comprise of current assets (Gill, 2010) but surplus investment in current assets results in low profits, whereas low investment in current assets results in liquidity crisis (Gitman, 2009) and difficulty to maintain smooth business operations (Horne and Wachowicz, 2004).

The management of working capital is one of the most important financial decisions of a firm. Sufficient level of working capital should be present for smooth running of a company regardless of the nature of business. The management of a firm can create value for their shareholders by reducing the

number of days in accounts receivable. This is because as the average collection period decreases, the profitability of the firms increases. It is noted that as average collection period increases, the level of bad debt also increases which in the long-run results to reduction in profitability. The management can also create value for their shareholders by reducing their inventories to a reasonable level since the results indicate that profitability increases as the inventory turnover days decreases. (Ponsian, Chrispina, Tago,& Mkiibi, 2014).

In another study, Mongrut, Fuenzalida, Cubillas and Cubillas (2008) pointed out that firms face a number of important decisions in their current operations and one of them concerns the efficient management of liquidity. This decision is critical, as it is the reason for which many firms go bankrupt. They argued further that analysis on working capital management is critical as this practice compasses a number of policies relative to the management of liquidity. Working capital management provides the firms with information on the liquidity needed to operate efficiently.

Appropriate evaluation of the working capital and identification of its basic elements can help managers decide over the companies' operations more efficiently and effectively, and enable them to manage working capital effectively in a way that will balance liquidity and profitability (Mansoori & Muhammad, 2012). Determining the important factors affecting working capital management

would affect level of investment in current assets as well as the appropriate sources of financing. One of the distinguishing features of the fund employed as working capital is that it constantly changes its form to drive the "business wheel". It is also known as "circulating capital" which means current assets of a company, which are changed in the ordinary course of business from one form to another, for example, from cash to inventories, inventories to receivables, and receivables to cash.

A firm may adopt an aggressive working capital management policy with a low level of current assets as percentage of total assets or it may also use for the financing decisions of the firm in the form of high level of current liabilities as percentage of total liabilities. Excessive levels of current assets may have a negative effect on the firm's profitability; whereas, a low level of current assets may lead to lower level of liquidity and stock outs resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2004).

The main objective of working capital management is to maintain an optimal balance between each of the working capital components. Business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables (Filbeck and Krueger 2005). Firms can reduce their financing costs or increase the funds available for expansion projects by minimizing the amount of investment tied up in current assets. Most of the

financial managers' time and effort are allocated in bringing non-optimal levels of current assets and liabilities back toward optimal levels (Lamberson 1995). An optimal level of working capital would be the one in which a balance is achieved between risk and efficiency. It requires continuous monitoring to maintain proper level in various components of working capital such as cash receivables, inventory and payables.

1.2 Problem Statement

Working capital liquidity implies having sufficient money or access to funds to fulfill the need of all payment commitments which fall due in the short-term. In brief, it is better to use the quick ratio than the current ratio because it does not take into account the inventory of the firm. The primary source of liquidity is the cash and cash equivalent. To have enough cash in hand firm should speed up the collection of its accounts receivable. The longer the account receivable collection takes, the lesser will be the amount of cash available will be. Maintaining a satisfactory level of liquidity is regarded as a helpful tool in accessing the resources available to satisfy present business activities in meeting all the due expenses.

The assessment of the overall degree of venture in working capital gives an opportunity cost trade-off. It is the measurement of liquidity versus profitability or cash flow versus profit. While ensuring the profitability degree of companies, the finance manager should also give attention to its working capital management which influences the level of profit a company's earns. This means the finance manager should look into the firm short term cash rotation, which is basically the daily activities of the firm and the most important factor is the current liability. Current liability is an opportunity cost for firms as it frees the firm from the interest obligation. In overall conclusion Su and Dong (2010) and Biger, Gill and

Mathun (2010) concluded that firms that wish to excel in business should maintain a satisfactory degree of working capital.

Negligence of managing working capital, become a common factor which lead to business collapse. The decline in business shows the weakness of firm in meeting their short term need, especially the urgency to meet their overdue bills. This also includes the misinterpretation of firm, where firm tends to overtrade during the growth period and ended up overstocking inventory. Firm may adopt two types of short term financing policy, either the flexible current asset policy or restrictive current asset policy. Therefore the appropriate degree of working capital contributes to the performance of firm and its continuity. The firm should also understand the seasonality of its business before overstocking the inventories. (Harris, 2005)

Despite several studies has been carried out by many scholars (Gul, Khan, Khan & Rehman, 2013; Oladipupa & Okafor, 2013; Ahmad, 2013; Makori, Omesa, Maniagi & Musiega, 2013; Okafor and Oladipupa, 2013; Awunyo-Vitor, Akoto & Angmor, 2013; Arianpoor,Maradi & Salehi, 2012; Keraro, Gakure, Cheluget & Onyango, 2012; Kumar & Sharma 2011; Mathur, Biger & Gill 2010; and Mathuva, 2010). It is educational to understand the fact that there is still question as to the suitable factors which could serve as the best intermediaries of working capital control which promptly affect the performance of firms. Although studies

have been conducted previously, the findings on the relationship between working capital management and firm performance are mixed and rather inconclusive. Hence this research intends to fill in the gap and assess the relationship between working capital management variables such as trade receivable, trade payable, inventory, cash and cash equivalent with firm performance, which is represented by Return on Asset (ROA).

In today's world, new innovations are changing how traditional businesses operate and manage the working capital. Innovations such as Supply Chain Finance and Robotic Process Automation are helping companies collect their cash faster, manage their supply chains more efficiently and drive cost down. Recent study across 424 Malaysian listed companies showed that there is RM110 billion of cash tied up in their working capital. The amount is equivalent to 19% of combined sales, which they extract by improving working capital performance, a mixed result with only 7 out of 14 sectors improving their working capital performance in 2017. Malaysian firms seem to make short term decision when it comes to managing their working capital and cash flows of all three working capital components (Account receivables, Account payable and Inventory). Most firms would choose to stretch their payables. In fact this trend has been consistent since 2016; with about 60% of the firms are doing it.

The aim of this research is to measure the extent to which working capital significantly related to the performance of firms in Malaysia. Relatively, only few studies have been carried out in this scope from the year 2000 to 2016 (Meng Yee, 2015; Zariyawati, Rose & Hirnissa, 2017; Rahimah, Nurdiyana, Farha & Balkish, 2015; Ahmad Rizal, & Choong, 2018; Fairuz & Ahmad Rizal, 2018 and Ridzuan, 2011), mainly focusing on measuring the relationship between working capital and firm performance. This study specifically focuses on examining the effect of working capital on firm performance. The findings of this study possibly will help firm managers to have better understanding and knowledge on how to manage working capital and have the ability to increase the firm's value, thus maximizing the shareholders wealth. As a result of increased value of firm, it will cultivate the confidence level of investors to invest in firms. As more investors are confident to invest in Malaysia, it will help to boost the economy of Malaysia. In addition, the findings of this research will also help the finance manager to have a clear picture of working capital management process.

1.3 Research Question

Based on the problem statement discussed earlier, the following are the research questions developed for this study.

i. What is the relationship between Average collection period (ACP) and firm performance (ROA)?
ii. What is the relationship between Inventory conversion period and firm performance (ROA)?
iii. What is the relationship between Average payable periods (APP) and firm performance (ROA)?
iv. What is the relationship between Cash Conversion cycle (CCC) and firm performance (ROA)?
v. What is the relationship between Current Ratio (CR) and firm performance (ROA)?

1.4 Research Objectives

Based on the research questions developed earlier, the following are the objectives of this study.

i. To examine the relationship between Average Collection Period (ACP) and Firm Performance (ROA).
ii. To examine the relationship between Inventory Conversion period (ICP) and Firm Performance (ROA).
iii. To investigate the relationship between Average Payment Period (APP) and Firm Performance (ROA).
iv. To investigate if there is a relationship between Cash Conversion Cycle (CCC) and Firm Performance (ROA).
v. To examine the relationship between Current Ratio (CR) and Firm Performance (ROA).

1.5 Significance of the Study

It is quite clear that many firms understand that working capital plays a crucial role in firm financial decision making. In order to increase profit and shareholders' value, many firms are giving more importance in increasing the sales of the firms which in turn, increases the net income distributable to shareholders.

Many finance managers and operating managers of the firm fail to understand that profitability is not wholly dependent on sales alone. The manager should look at the whole operating cycle of the firm and assess the working capital need, including the receivables, payables and inventories, along with efficient cost management so that the desired profitability level can be achieved. Increasing inventory does not necessarily result in sales growth for the firm. Many managers underestimate the seasonality of their sales assuming that it will be the same in future and disregard the overall cycle of business. Overstocking of inventory does not only increase the storage cost but it can also cause the cash to be tied up. Inventory should be turned into cash as soon as possible to avoid shortage in cash.

This research will provide some insights to firm managers on working capital management. The managers as the agents will have a clear understanding on proper management of working capital management while growing the profit level of firm. Firm managers should able to decide the amount of inventory they should purchase.

Overall this research will give a clear guidance and picture to academicians and practitioners on the overall management of working capital management and the level to which its affects the performance of firms.

1.6 Scope and Limitations of the study

The study is carried out to examine the relationship between working capital and firm performance. The research focuses primarily on listed firms of Bursa Malaysia. The study scope covers total of 272 listed companies in Bursa Malaysia. The sectors include Consumer goods, Industrial Sector, Construction, Plantation, Technology, Properties, Trading, Finance and Hotels.

The limitation of studies is the difficulties in obtaining financial information of some companies for the time period of 2012 to 2016.

1.7 Organization of the Thesis

There are five chapter included in this research. Chapter one provides the introduction of the study. It consists of the background of the study, the problem statement, research questions, research objectives, significance of the study and scope and limitations of the study. Chapter two discusses the relevant literature review and previous empirical evidences. Chapter three focuses on the methodology of the research by explaining the research framework, hypothesis development, research design, operational definition, measurement of variables, data collection method, sampling, data collection procedures and techniques of data analysis. Chapter four provides the analysis of the findings. and chapter five provides the conclusion of the study and also recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant literature and previous empirical evidence on the components of working capital management and the performance of firms. It covers the theoretical and empirical literature on the variables of working capital components and their relationship on firm performance, which consists of all independent variables such as Average collection period (ACP), Inventory Conversion period (ICP), Average payable period (APP), Cash Conversion cycle (CCC), Current Ratio (CR) and finally the dependent variable Return on Asset (ROA) which reflects the performance of firms.

2.2 Review of theories

In Malaysia, there are several studies conducted on the relationship between working capital management and firm performance in various sectors. For example, Abdul Rahim, Annuar and Zariyawati (2010) carried out a study which covers almost 1628 firms from six selected industries listed in Bursa Malaysia for the period of 1996 to 2006. The findings of the study concluded that no relationship exists among cash conversion cycle and firm performance. The study suggested that to increase the firm profitability level, firms must lower their cash

conversion cycle. The lower the period taken for cash conversion, the higher will be the firm profit level.

The relationship of working capital and profitability was investigated using liquidity factors in Nasruddin (2006) who used a sample of 145 small and medium manufacturing companies in Malaysia. Non-parametric Spearman rank correlation coefficient was used to analyze the data. He concluded that firms with higher profitability have high level of liquidity thus the relationship between liquidity and profitability is moderately positive. The profitability of firms with lower level of profits is weakly positively correlated with liquidity. The study concluded that various industries have different level of liquidity.

Nor Edi and Noriza (2010) conducted another study using 172 firms listed on the main board of Bursa Malaysia. The main focus of the research is to evaluate the market valuation and profitability by looking at working capital management of the firms. The data analysis was conducted from the year 2003 to 2007. The findings of the research confirmed that working capital determinants such as current ratio, current asset to total asset ratio, cash conversion cycle, current liabilities and debt to asset ratio are negatively and significantly related with the performance of the firm. The variables were measured using Tobin's Q and profitability was measured by return on asset and return on capital. The researchers recommended that to increase the profitability of firm, the business

should focus on working capital attributes towards increasing the shareholders' value.

In another study, Yadav, Surendra and Jain (2001),conducted a research with the objective of evaluating and understanding the interrelationship between current asset, current liabilities and working capital management among industries in India, Thailand and Singapore. The researchers have shown that current asset and current liability are the major sources of liquidity and concluded that there is wide variance of liquidity level among the industries of the three countries. The researchers concluded that the working capital relationship with firm performance differ based on the industry and the nature of the business as well as the country in which the firms operate. The researchers recommended that the working capital management should not be viewed as a general term rather to be specific based on the industries and the policy in their countries.

Chatterjee (2010) conducted comparison study of firm profitability and working capital determinants from the aspects of short term financing policy strategy. The research focused on the short term financing strategy employed by firms by investigating whether firm profitability is affected by the level of working capital. The comparison refers to the flexible and restrictive short term policy of firm. on the research studied 30 firms listed on London Stock Exchange from the year

2006 to 2008 and the findings show that both strategies are negatively correlated with the firm profitability.

2.1 Average Collection Period

The collection period of trade receivables is basically defined as the length of time a firm takes to collect its outstanding payment from its customers. It is the duration from the point of sales to the point it is converted into cash. The trade receivable collection period is measured by dividing the total account receivable over the average credit sales of the firm. A longer period of accounts receivable collection requires a greater investment in accounts receivable, indicating a lower level of cash is available to meet firm's short term obligations.

Mekonnen (2011) concluded that the average collection period and firm profitability are negatively associated to each other. The study suggested that a firm can increase the firm profitability level by setting a lower level of receivable collection days. Thus it can be concluded that as the average collection period is shortened, the opportunity for a firm to increase its profitability level is increased. Quicker cash inflow from accounts receivable can be used to replenish more inventories which will directly increase the sales of the firm.

In their study, Lazaridis and Tryfonidis(2006) stated that average collection period is negatively related to firm profitability. They concluded that an increase in average collection period will reduce the profitability level of a firm, implying that firm managers should reduce the number of days given to customers to settle their outstanding debt. Accounts receivable should be collected as soon as possible to increase the level of firm profits.

The study conducted by Deloof (2003) clearly mentioned that the progress of a company depends on the length of time accounts receivable are collected. He stressed that the quicker a firm collects its outstanding debt, the better will be the firm's cash flow. The delays made in account receivable collection will eventually lead to bad debts and may become irrecoverable. When firm gives ample period to its customers the profit can be only recognized once the cash is received. Basically the profitability is highly influenced by firm credit policy and collection method.

Average collection period is negatively related to firm performance according to (Brigham and Houstan, 2003). They suggested that firms should reduce the period of debt collection to have a greater profitability level. Cash flow that is generated as quickly as possible help firms to be able to reinvest in short term operations and increase the level of sales as targeted.

According to Gil, Bigger, Nahum and Mathur (2010), there is significantly negative relationship between average collection period and firm operational profitability. The researchers suggested that the profitability of firm depends on the managing efficiency of managers in controlling a proper accounts receivable and the credit control practices in firm.

2.2.2 Inventory Conversion Period

Inventory turnover period refers to the days a firm takes to clear its inventory from the shelves. Generally it refers to the time period of the transition from inventory to sales. The amount of inventory kept by a firm characterizes the working capital strategy adopted by a firm, and it should closely monitor the movement of its inventory. Slow movement of inventory shows a low performance of sales. The faster the inventory moves from shelves, the higher will be the growth in sales. Keeping inventory for quite a long period may incur storage cost for firms. According to Ruichao (2013) lower inventory ratio indicates slow movement of inventory thus unsatisfactory level of sales of the firm.

Mansoor (2012) investigated the relationship between working capital and firm profitability and found that managers are able to increase the level of firm profits by lowering the inventory turnover times. Lower level of inventory will increase the sales and return on asset. This will help the firm from overstocking the

inventory, thus becomes the best decision a firm can adopt to increase the performance of firm in terms of profitability.

Many scholars (Muhammad & Mansoor, 2012; Nasr & Rehman, 2007; Dong, 2010; Ruichao, 2013; Tryfonidis & Lazardis, 2006; and Falope & Ajilore, 2009) have empirically proven through their findings that inventory conversion period and firm profitability are negatively correlated. In contrast, several other researchers (Gill Biger & Mathur, 2012 and Mathuva, 2010) found that inventory conversion period and firm profitability are positively related to each other.

Maintaining a satisfactory level of inventory helps firms from failure to meet the demand of the market and also to meet the production level of business. Nevertheless, Mathuva (2010) argued that investing too much in inventory can cause the cash flow tied up and interrupt the investment of business in revenue generating activities. He stressed that inventory level should be kept at an average. It is not necessarily important for firm to keep pre order inventories to meet the market demand.

As inventory level is important in deciding the sales level of firm, it is important to maintain a proper level of sufficient stock of inventory. Firm managers have to analyze the movement of inventory before restocking it. A good identification of

product sales is necessary to determine the level of inventory. In terms of inventory management, managers should be able to categorize the products to determine which inventories should be sold first or later, referring to the accounting policy of First in first out (FIFO) or Last in Last out (LIFO). Being able to determine this, managers can decide on the level of inventory to be stored. Storing inventory is not cheap as it incurs cost. The more days inventory sits in the warehouse, the expensive will be the cost of storage. Maintaining an appropriate level of inventory will ensure that firm meet its sales target and improve the performance in overall scale (Brigham and Houstan, 2003).

2.2.3 Average payment period

Average payment period in days define the length taken by firms to settle their outstanding bills to suppliers. The circle starts from the day the firm purchases raw materials until the cash for it is paid off. Accounts payable plays a crucial part in the operating cash flow of a firm. Most firms adopt a strategy to lag their payment to supplier to utilize the inexpensive cost of financing. Delaying the payment to suppliers will never incur any interest charges compared to borrowing from the bank. What hurts the firm opportunity cost is when trade discount is offered for early settlement of accounts payable. According to Ruichao (2013), firms with smaller capital tend to delay payments to suppliers compared to firms with larger capital. He concluded this with his research sample from Tanzania, where smaller companies are proven to delay payments to suppliers.

The working capital rules states that managers should hold the payment to creditors without putting the business relationship at risk. It is also an advantage to the firm to use the cash dedicated for accounts payable for other investment of business. It is known as opportunity cost for firms in the short run. Through his finding on the influence of working capital management on firm profitability, Mathuva (2010) concluded that there exists a positive relationship between average payable period with firm profitability. The finding further concludes that the greater the delay in payable days automatically increases the performance of firm in terms of profitability.

Naimulbari (2012) found that average payable period and firm performance are significantly correlated. Based on the finding of his studies he has stated that firms will have to forgo the privilege of a discount to enjoy the opportunity cost of delaying payment to suppliers. Delayed payment to suppliers has been a trend of enjoying lower cost of financing sources.

There were contradicting findings on the association between average payable period and firm profitability. Several studies (Sokmen, 2012; Vurol, Cetenak and Mekonnen, 2011; Deloof, 2003; Ray, 2012; Hussain, Hashmi and Saghir, 2011; Reheman and Nasr, 2007 and Reheman et al., 2010) proved that a significant negative relationship exists between average payable period and firm profitability. The studies show that firms which took longer period to settle the outstanding

payment to supplier may end up in high debt and at the risk of losing the relationship with suppliers. In order to settle the long overdue payment which has piled up, firms may tend to take long term debt which in other way reduces the firm performance due to higher rate of interest.

2.2.4 Cash Conversion Cycle

The cash conversion cycle or the operating cycle of firms refers to the time period taken by a firm to recover back its cash outflow from the collection of accounts receivable. Generally, business cash is locked in firm's stock and collection from debtors. Firm is able to cycle the cash once inventory is converted into sales and all the outstanding payment from sales are collected immediately. Cash conversion cycle summaries the overall effective control of working capital by firms. Inadequate management of inventory and accounts receivable will lead the business into major shortage of fund. Cash conversion cycle is measured by average collection period in days plus inventory conversion period in days and subtracting with average payment period in days. The final answer in days concludes how many days a firm takes to cycle back its cash.

According to Naimulbari (2012), through his observation on Bangladesh pharmaceutical sector on finding the relationship between firm profitability and working capital components, it is concluded that firm profitability is not affected by cash conversion cycle. An increase in cash conversion cycle does not impact or

change the profit level of firm. He concluded in his finding that both the variables are negatively correlated. The researchers concluded that the cash conversion cycle should be shorter as to increase the firm income. The longer cash locked in the form of inventory and cash from trade receivable, the more will be the urge of the firm to obtain external financing which will come along with higher financing cost such as interest.

According to Arnold (2008), firms require lower resources if the cycle of cash is shorter. The longer the cash cycle of a firm, the higher will be the investment of firms in working capital, which means the cash is tied up in accounts receivable. It shows that the sales of the firm are aggressive. Higher investment in short term capital will increase the firm profitability if the sales are aggressive. The study concludes a negative association between cash cycle and firm profitability, implying that the higher the cash conversion cycle, the lower will be the firm turnover.

Decrease in profitability occurs as a result of an increase in the number of days in cash cycle. When firms take more days to convert its cash cycle, there will be shortage of capital available. According to Dong (2010) firm performance is negatively impacted by working capital management.

2.2.5 Current Ratio

One of the most effective measurements of firm liquidity is current ratio. Current ratio explains the capacity of a business in meeting its current term obligations. The higher the current ratio, the higher is the tendency of a firm in meeting its obligation in short term and also has excess of fund to invest in short term. Current ratio below 1.0 shows the shortage of cash in firms. Basically firms with current ratio below 1.0 have poor management of working capital. A ratio of 1.2 to 2 is preferable as it means a firm has enough short term capital to run their day to day activities. Current ratio which exceeds 2.0 shows poor utilization of funds for short term investment. Firms are not using the excess cash to add more inventories in the business and to increase the growth of sales (Robinson, 2015).

Abuzarand Eljelly (2004) and Nasr and Raheman (2007) concluded that current ratio does not impact the firm performance in terms of profitability. There is no existence of positive relationship between the variables. This study is in contra with findings from other studies (Bolek and Wilinski, 2012; Ruziqa, 2013; Priya and Nimalathasan, 2013; Vayanos and Wang, 2012; Khidmat and Rehman, 2014 and Saleem and Rehman, 2011) which generally found that current ratio is significantly correlated with firm performance.

Eljelly (2004) and Mekonnen (2011) found that current ratio and firm profitability are significantly and negatively related. The researchers concluded that firm with

higher current ratio has lower level of profitability measured by return on asset. The finding summarizes that if firms with higher current ratio do not manage the short term capital efficiently, the available cash will be unutilized with a proper investment.

Halling and Hayden (2006) explained that an institution should able to explain and identify the liquidity risk which is associated with the current ratio level of firm. A firm liquidity requirement to meet its short term obligation fully depends on its short term financial strategy. Employment of wrong strategy will affect the profitability level of a firm.

2.3 Empirical Literature Review

Based on the study carried out by Deloof (2003) on 1009 Belgian non-financial firms from 1992 to 1996, it was found that there is a significant negative relationship between working capital management and firm profitability. Correlation analysis and regression analysis are applied to examine the relationship between working capital determinants and firm profitability. The findings show that firm goal of maximizing shareholders' wealth can be easily achieved by firm managers by lowering the trade receivable collection period days and inventory conversion days at a satisfactory minimum number of days.

Tryfonidis and Lazaridis (2006) conducted a study on 131 selected companies from Athen Stock Exchange (ASE) for the period of 2001 to 2004 and concluded that there is a significant negative relationship between cash conversion as the components of working capital management and gross operating profit which represent performance of the firm. The study concluded that firm managers will be able to create profit for firms if they handle the working capital components at a peak level of satisfactory.

Jose (2003) conducted a study on 2718 firms for the period of 1974 to 1993 to measure the association between working capital management and firm performance and concluded that an aggressive short term strategy which results in

lower cash conversion cycle is strongly associated with higher profitability level of firms.

Afza and Nazir (2007) focused on 208 public listed companies at Karachi Stock Exchange for the period of 1998 to 2005, using Tobin's Q to measure the significant level of firm profitability. The study concluded that working capital management and firm profitability are significantly and negatively related with the short term financial policy of a company.

Ganesan (2007) who selected telecommunication industry to conduct his study, concluded that working capital management is negatively and significantly related to the profitability of firms in the telecommunication industry. The variables used to measure working capital management are receivable period in days, inventory turnover in days and current ratio while the dependent variables are represented by cash conversion cycle, return on asset and return on sales.

Chowdry (2007) carried out a study on Bangladesh pharmaceutical industry and concluded that working capital management and financial performance are positively correlated. In contrast, Narware (2004) concluded that there is both negative and positive relationship between working capital management and firm profitability. The study was conducted on selected companies from Indian

National Fertilizer from for the period of 1990 to 2000. He added that there are low changes in terms of profitability when there are changes in working capital management.

Gill et al. (2010) conducted a study on 88 American firms listed on New York Stock Exchange from the period of 2005 to 2007. The aim of the research is to identify the association between working capital management and firm profitability; the research finding concluded that there is a significant relationship between the cash conversion cycle and profitability, as measured by gross operating profit.

Dang and Soo (2010) conducted a study on companies in Vietnam covering the period of 2006 to 2008 and found that cash conversion cycle and firm profitability are negatively correlated. When the days in cash conversion cycle increase, the profit of the firm decrease, and when cash conversion cycle decreases the profit of the firm increases. To solve the issue concerning the movement of cash conversion period and firm profitability, firm managers should optimize the cash cycle and increase the value for shareholders.

Cash conversion cycle and collection from debtors are significantly affecting the performance of a firm. This was confirmed by a study conducted by Raheman et

al. (2010) who investigated the impact of working capital management on Pakistan firms' performance for the period of 1998 to 2007. It is concluded that firms in Pakistan are adopting conservative short term financial policy thus the firms need to pay more attention on their accounts receivable collection days and the length of time taken to pay their creditors.

Ahmad Rizal and Choong (2018) conducted a research to examine working capital management moderating role on the relationship between the key determinants of working capital and firm performance among 282 public-listed manufacturing firms in Malaysia for the period of 2010 to 2014. The study concluded that the relationship between critical determinants of working capital and firm performance is moderated by both working capital requirement and net liquid balance.

A study conducted in Tokyo for a period of 1998 to 2007 by Oghloo and Jence (2008) aimed at examining the effect of working capital management on corporate profitability among firms in Tokyo. The findings show that working capital has negative significant impact on firm s performance while the size of firm is positively related to firm profitability.

Anvar et al. (2007) conducted a study on firms listed in Bursa Malaysia from 1996 to 2006 by examining the vital relationship between working capital and

corporate performance. The findings concluded that there is a significant relationship between cash conversation cycle as measured by firm liquidity, and corporate performance. In supporting the study, Sing and Penny (2008) also found that the liquidity component of working capital has significant effect on firm performance.

A study conducted by Fairuz and Ahmad Rizal (2018) investigated the relationship between working capital management and profitability of 94 listed Bumiputera-controlled companies in Malaysia for 2006 until 2012. The study concluded 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.

2.4 Summary

The literature review shows numerous studies conducted to examine the relationship between working capital and firm performance. There is a gap among the numerous studies whereby no fixed components of working capital affected the firm performance. Researchers have concluded various results in their findings which change according to the sector, country and year of analysis. The studies on this topic will be a good guidance to managers to add value on shareholder wealth, as managers can adopt the best working capital management strategies.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

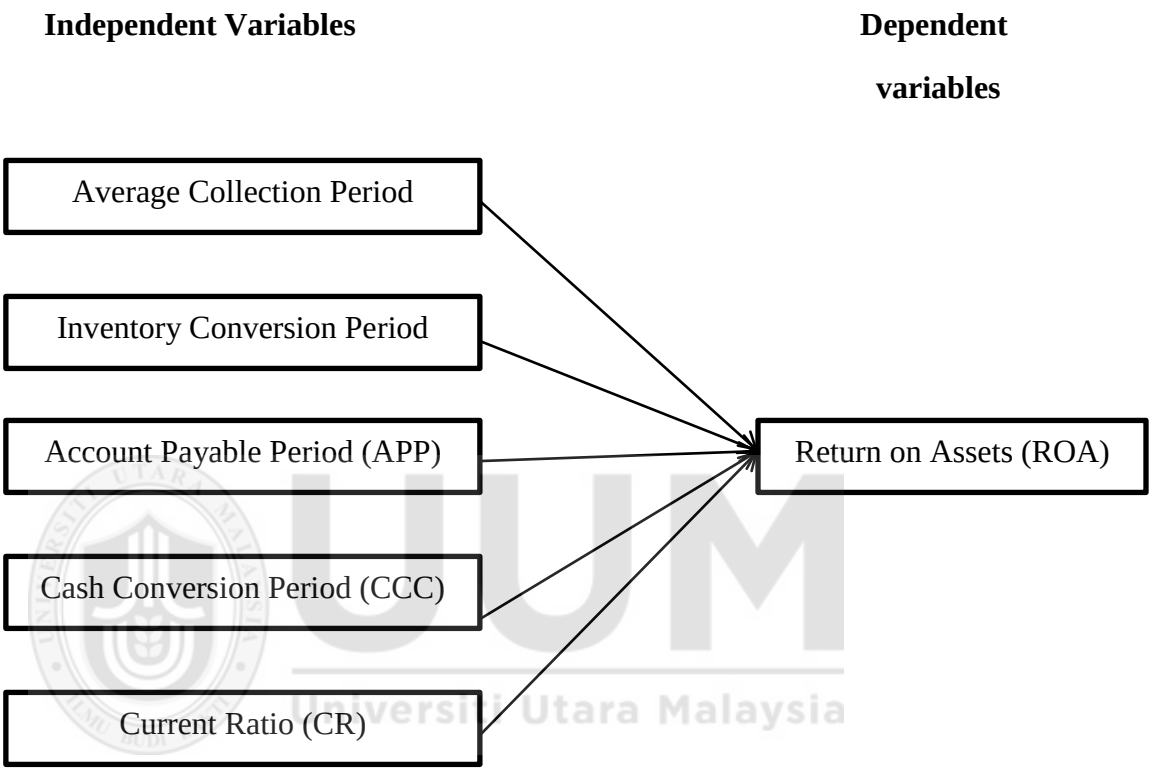
This chapter discusses the research methodology used for this study. The chapter consists of research framework, hypotheses development, research design, operational definition, measurement of data and instruments, population sample, data collection, technique of data analysis and finally the conclusion of the chapter.

3.2 Research Framework

The research framework consists of all the variables in the study. The list of independent variables and dependent variable are framed to study the relationship of the independent variables towards firm's performance among firms listed in Bursa Malaysia for the year of 2012 to 2016.

Figure 3.1

Conceptual framework of the relationship of Average collection period, Inventory conversion period, Account payable period, Cash conversion cycle, and Current ratio towards firms performance in Malaysia.



The objective of the research is to determine whether there is a significant relationship between the dependent variable and the independent variables. At the end of the research, the findings should be able to indicate if there is a significant relationship between average collection period, inventory conversion period, average payable period, cash conversion cycle, current ratio and return on asset.

The dependent variable of this study, firm performance, is proxied by return on assets (ROA) as it is used in many studies to measure how efficiently and effectively a firm manages its operation and uses its assets to generate profits

(Raheman, 2012; Mohamad & Mohd Saad, 2010; Mansoori & Muhammad, 2012). The independent variables selected for this study are average collection period, inventory collection period, average payable period, cash conversion cycle and current ratio.

The study conducted by Deloof (2003) stated that the progress of the company depends on the length of accounts receivable collection. The author stressed that the quicker a firm collects its outstanding debt, the better will be the firm's cash flow. The delays made in account receivable collection will eventually lead to bad debts and possibility of irrecoverable debts.

Maintaining a satisfactory level of inventory helps firms from failing to meet the demand of the market and also to meet the production level of business. Nevertheless, Mathuva (2010) argued that investing to much in inventory can tie up the cash flow and interrupt the investment of business in revenue generating activities. He stressed that inventory level should be kept at an average. It is not necessarily important for firm to keep pre order inventories to meet the market demand.

Accounts payable plays a crucial part in the operating cash flow of a firm. Mostly all firm adopt a strategy to lag their payment to supplier to utilize the inexpensive cost of financing. Several researchers (Mathuva, 2010; Sokmen, 2012; Vurol,

Cetenak and Mekonnen, 2011; Deloof, 2003 and Ray, 2012) stated that delay in payment to creditor has significant impact on firm performance.

According to Arnold (2008), Dong (2010) and Naimulbari (2012) cash conversion cycle summarizes the overall effective control of working capital by firms. Inadequate management of inventory and account receivable will lead the business into major shortage of funds.

According to previous researchers (Robinson, 2015 and Halling and Hayden, 2006) an institution should able to explain and identify the liquidity risk associated with the current ratio level of firm. A firm liquidity requirement to meet its short term obligation depends on its short term financial strategy. Employment of wrong strategy will affect the profitability of firm.

3.3 Hypotheses Development

H1 There is positive relationship between average collection period (ACP) and Firm performance (ROA).

H2 There is positive relationship between Inventory conversion period (ICP) and Firm performance (ROA).

H3 There is positive relationship between Average payment period (APP) and Firm performance (ROA).

H4 There is positive relationship between Cash conversion cycle (CCC) and Firm performance (ROA).

H5 There is positive relationship between Current Ratio (CR) and Firm performance (ROA).

3.4 Research Design

The study covers a panel data of 272 listed firms of Bursa Malaysia. The financial information of sample data was derived for the period of 2012 to 2016. Nine various sectors were selected to examine the working capital relationship with firm performance.

Firms with incomplete data and financial information for the period under reference were excluded from the study. Quantitative method in term of

secondary data was used in these studies. The studies aim at determining the relationship between working capital and form performance in Malaysia.

3.5 Operational Definitions

The variables and key term of research are discussed further in this section. The measurement and definition of each variable such as working capital, average collection period, inventory conversion cycle, average payable period, cash conversion period and current ratio are defined under the operational definition of the study.

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3.5.1 Working Capital

Working capital of a firm refers to the efficiency of a firm in taking advantage of opportunity cost and effectively using the fund for future investment. It also mean the funds available to operate the daily operation of a firm, usually looking at the available amount in current asset after paying off the firm current liabilities (Ross, Westerfield and Jordan, 2010). Working capital is measured as follows:

Current asset – Current Liability

3.5.2 Average Collection Period

Average collection period of trade receivables refers to the length of time a firm takes to collect its cash following the sales. Average collection period says much about the firm credit control policy. Firms which rendered long period of time to customer may face a risk of bad debts. It is crucial for managers to have a proper control over account receivable so that firms have enough cash to meets their operation need (Nwaobia, 2015). Average collection period is measured as follows:

$$\frac{\text{Account Receivable}}{\text{Average Sales}}$$

3.5.3 Inventory conversion Period

Inventory turnover period in days refers to the time taken by a firm to convert its inventory to sales. It measures the movement of inventory and aggressiveness of firm's sales. The longer an inventory sits in the firm, the more cash is locked up in working capital investment (Ruichao, 2013). Inventory conversion period is measured as follows:

$$\frac{\text{Inventory}}{\text{Cost of goods sold}} \times 365$$

3.5.4 Average Payable period

Average payable period refers to the length of days firms take to settle their outstanding debts to creditors. Often accounts payable are regarded as free cost of financing, thus firms utilize the opportunity cost delay the payment as long as possible to enjoy the availability of cash (Ruichao, 2013). Average payable period is measured as below:

$$\frac{\text{Account Payable}}{\text{Cost of goods sold}} \times 365$$

3.5.5 Cash Conversion Cycle

The cash conversion cycle or the operating cycle of firms refers to the time period taken by a firm to recover back its cash outflow from the collection from accounts receivable. Generally business cash are tied up in inventory and trade receivables. Firms are able to cycle the cash once inventory are converted into sales and all the outstanding payment from sales are collected immediately.

Cash conversion cycle is measured as follows:

Average collection period (ACP) + Inventory Conversion period (ICP) – Average Payable Period (APP)

3.5.6 Current Ratio

Current ratio measures the liquidity state of any business. Current ratio explains the capacity of firms in meeting their short term obligations. The higher the current ratio, the higher is the tendency of firms to meet the short term obligation and also has excess of capital to invest in short term investment especially inventory (Robinson, 2015). Current ratio is measured as follows:

$$\frac{\text{Current Asset}}{\text{Current Liability}}$$

3.6 Measurement of Variables/ Instrumentation

The aim of the research is to examine the relationship between working capital and firm performance. All the financial information pertaining to working capital was derived from Bursa Malaysia. Data collection covers information on firm's accounts receivables, account payable, sales, cost of sales, non-current assets and current assets, current liability, inventory and profit after tax. The data collection covers the period of 2012 to 2016.

3.7 Data Collection

The population of this study is all firms listed on Bursa Malaysia. The firms are chosen based on the availability of required information covering the period of research 2012 to 2016. Fur

3.8 Sampling

272 firms were taken as sample to conduct the research, which is considered sufficient to represent the population. According to Uma Sekaran (2003), the suggested sample size for given population of 929 is approximately 272.

3.9 Data Collection Procedures

The process flow of the research started with identifying the research variable based on the previous research papers and examples. The common variables used by researchers are identified and additional variables were included to support the study and answer the research questions.

The second process is data collection method, whereby secondary data were collected from Bursa Malaysia for the period of 2012 to 2016. Once the raw data is collected, the data is tabulated and computed based on selected ratios needed to run the relationship test. Computed data were analyzed using E-Views software to examine the significant association between the independent variables and dependent variable.

3.9 Technique of Data Analysis

All together five independent variables were used in this research. The variables are average collection period, inventory conversion period, average payable period, cash conversion period and current ratio. The variables were chosen to examine the relationship between working capital and firm performance. All the five variables' information were tabulated for the period of 2012 to 2016 for the selected 272 firms listed in Bursa Malaysia

3.10.1 Descriptive Analysis

Descriptive analysis was used to analyze the distribution of data. It covers the statistical distribution of data in terms of mode, median, mean, and standard deviation. The descriptive data is useful in analyzing the least or maximum days taken by firms to complete their transactions. Descriptive analysis is useful to relate the output of regression and concluding the appropriate number of days should be kept by firms in terms of accounts collection period, inventory conversion period, account payable period, cash conversion period and level of current ratio.

3.10.2 Normality Test

Normality test was applied to measure the normality distribution of data, using the level of skewness and kurtosis.

3.10.3 Inferential Analysis

3.10.3.1 Correlation Analysis

Correlation analysis is conducted in order to determine the correlations among variables. Degree of relationship is expressed as correlation coefficient (Charitou et al., 2010). The relationship of working capital management on the firm's performance is modeled using the following regression equation:

$$\mathbf{ROA = \alpha C + \beta 1\ ACP + \beta 2\ ICP + \beta\ 3\ APP + \beta 4 CCC + \beta 6 CR}$$

3.10.3.2 Regression Analysis

Regression analysis iss used to analyze the relationship between independent variables and dependent variable. In this research multiple regression analysis is adapted as it involves multiple variables which are investigated simultaneously. The R square result shows how significantly the variable is related to the firm's performance.

3.11 Summary

The methodology used for the study is very important, as it will lead to a proper outcome to the research study. A well planned flow of research method will give a good research paper for future references. The method chosen to measure the data to determine the degree of relationship with firm performance is discussed in this chapter.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter discusses the results and findings of the study.

4.2 Data Analysis and Findings

Secondary data on 272 firms listed on Bursa Malaysia were used in this study. Data are pooled from the year 2012 to 2016 which cover nine sectors. Three types of data analysis were used, namely, descriptive analysis, correlation analysis and regression analysis.

4.2.1 Normality Test

Table 4.1

Skewness and Kurtosis Analysis

Variables	Skewness	Kurtosis
Return on Asset	-1.2072	1.1268
Average Collection Period	-0.1182	1.8279
Inventory Conversion period	-0.1755	1.9196
Average payment period	-0.2348	1.5024
Cash conversion cycle	0.1889	1.7318
Current Ratio	1.0783	1.6668

The measurement of Skewness and Kurtosis is considered normally distributed with the range of -1.96 to +1.96. The skewness of the normal distribution used to examine whether data is normally distributed in the sense of whether its long tail

to right or short tail to left (George & Malley, 2010). Based on the normality test, the data collected are considered as normally distributed.

4.2.2 Descriptive Statistics

Table 4.2
Descriptive statistics of the variables used in the study.

Variables	N	Minimum	Maximum	Mean	Std Deviation
ROA	1360	-2.89	1.25	0.20	0.50
ACP	1360	10.00	271.09	118.83	42.08
ICP	1360	10.03	297.48	121.85	40.24
APP	1360	10.29	286.68	116.33	42.22
CCC	1360	10.08	299.38	124.00	51.72
CR	1360	-0.89	10.04	1.18	2.06

Table 4.2 shows the summary of descriptive statistics of all the variables. The table summarizes the mean value, standard deviation, minimum and maximum of each variable. According to the table, the mean value for return on asset is 0.20, with a standard deviation of 0.50.

Average conversion period shows a minimum collection period of 10 days, which shows an aggressive collection method of receivables, with a maximum of 271 days to collect the outstanding payment from its customers. Inventory turnover period has a minimum conversion period of 10.03 days, and an average of 122

days with a standard deviation of 42.04%. The maximum numbers of days took by firms to convert the inventory into sales is 297 days.

The firms in the sample of the study take a minimum of 10 days to settle payments to its creditors, with a mean of 116 days. Maximum day taken to pay back the debt of the firm is 287 days. Firms are utilizing the opportunity cost arising from the late payment to creditors.

The average cash conversion cycle is 124 days with a standard deviation of 48%. The highest level of current ratio is 10.04 times with a standard deviation of 2.06%. The mean current ratio for the firms in the sample is 1.18 times, implying that on average, the firms have RM1.18 in current assets to cover every RM1.00 in current liabilities.

4.3 Inferential Analysis

Inferential analysis was used to examine the hypothesis statement of the research and thus to examine the degree of relationship between each variables in the study. Pearson correlation is used to explain the strength of association among the variables. Linear regression is used to examine the influential strength of both independent and dependent variables.

4.3.1 Pearson Correlation Analysis

Table 4.3

Correlations among the variables in the study

Correlation (P-value)	ROA	ACP	ICP	APP	CCC	CR
ROA	1					
	-					
ACP	0.047435	1				
	0.0000	-				
ICP	0.042527	0.126947	1			
	0.0000	0.0000	-			
APP	0.00893	0.30255	0.281819	1		
	0.7421	0.0000	0.0000	-		
				-		
CCC	0.081706	0.463826	0.444176	0.340147	1	
	0.0026	0.0000	0.0000	0.0000	-	
CR	0.300425	0.006303	0.095175	0.070183	0.029348	1
	0.0000	0.0000	0.0000	0.0000	0.0000	-

*Correlation is significant at the level 0.01

Based on the results in table 4.3, the average collection period (ACP) is positively correlated with return on assets. Both variables have a weak correlation value of 0.047. However, it significantly correlated with a probability value of $p<0.01$.

Inventory turnover period (ICP) is positively correlated with Return on asset (ROA) with coefficient of 0.0425 at a significant level of ($p<0.01$).

Accounts payable period (APP) on other hand has a positive correlation with return on Asset (ROA) with a correlation coefficient of 0.0089. Its shows a weak relationship between the variables. Average payable period is insignificantly correlated with ROA a probability value of 0.7421.)

The correlation coefficient value between cash conversion cycle (CCC) and return on asset (ROA) is 0.0817 and it significantly correlated with a p-value of 0.0026. The result shows that the cash conversion cycle of listed firm in Malaysia has little positive significant correlation with firm performance.

The correlation coefficient value between current ratio and return on asset is 0.3004. Its shows an average positive relationship between current ratio and return on asset. The relationship between current ratio and Return on Asset is significant with the p value of 0.000.

4.3.2 Regression Analysis

A multivariate linear regression analysis is applied to examine the relationship between working capital management and financial performance of firms in Malaysia.

Table 4.4

Regression Model Adequacy

R-squared	Adjusted R-squared	Std Error	Prob (F-statistics)
0.6155	0.5923	0.4752	0.0000

Table 4.5 indicates that R^2 is 0.6155 which shows that 62% of the variation in ROA can be explained by the variation in the independent variables, while the remaining 38% can be explained by other factors which are not considered in the regression model of the study. In addition the adjusted R^2 is 0.5923. Therefore, in this case the model is a good fit with F- statistics probability value of 0.0000 which means that the model is significant.

Table 4.5

Results of Regression Analysis

Variables	Coefficient	Std Error	t-Statistics	Prob
C	0.0359	0.0597	0.060	0.5476
ACP	-0.0124	0.0023	-5.357	0.000
ICP	-0.0128	0.0023	-5.494	0.000
APP	0.0126	0.0023	5.464	0.000
CCC	0.0133	0.0023	5.737	0.000
CR	0.0710	0.0063	11.260	0.000

The table shows that the coefficient for average collection period (ACP) is -0.0124. This indicates that, the performance among firms in Malaysia will drop by 1.2% for every 1% increase in average collection period. The relationship between average collection period and firm performance is significant at p-value 0.000. This means that average collection period is significantly related to firm performance. Hence, hypothesis one (H1) is supported.

The coefficient for inventory conversion period is -0.0128, which means that an increase in the number of days in inventory conversion period will decrease the firm performance in Malaysia by 1.28%. Inventory conversion period is significant with firm performance with a significant value of 0.000 which is lower than p-value 0.01. This means Inventory conversion period is significantly related to firm performance in Malaysia. Hence, hypothesis two (H2) is supported.

The coefficient for average payable period is 0.0126. This value indicates that an increase in average payable period by one day will increase the firm performance by 1.26%. Average payable period is positively significant with return on asset with a p value of 0.000 which is less than the significant level (p-value 0.01). Hence hypothesis three (H3) is supported.

The coefficient for Cash conversion cycle is 0.0133. The coefficient level for cash conversion cycle shows a weak positive relationship. This indicates that the performance of firms in Malaysia will not be much affected with an increase in cash conversion cycle by 1 unit. Cash conversion cycle significantly related with a significant value of 0.000 which is less than p-value (0.01). Hence hypothesis four (H4) is supported.

Lastly, the Current ratio has a coefficient value of 0.0710. Current ratio comparatively has higher level of coefficient compare to other predictor variables. This means an increase in current ratio by 1 unit will increase the firm performance by 7%. Current ratio is significantly correlated with a significant p value of 0.000. Hence hypotheses five (H5) is supported.

From the results, it is found that H1, H2, H3, H4 and H5 are supported as all the independent variables are significantly related with ROA.

4.4 Summary

This chapter discusses the most important part of the study which is the findings and results. The findings show that the variables are consistent with previous empirical studies discussed earlier. Based on the results all the 5 hypotheses are supported with significant relationships of all the independent variable with firm performance (ROA). Among all variables current ratio has strong positive relationship with firm performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Based on the results obtained in Chapter 4, a discussion of the finding is presented in this chapter. Furthermore, the implications of the study and areas for further research are also discussed in this chapter. This chapter basically presents the finding of study and compares the result with other scholar's findings. The chapter consists summary of findings, limitation of findings, implication of findings and recommendations.

5.2 Summary of findings

The primary objective of this research is to investigate the relationship between working capital management and firm performance represented by Return on assets (ROA) among firms in Malaysia. Data has been analyzed by applying both descriptive and inferential statistics for the time period of 2012 to 2016. The findings concluded that average collection period is positively related to firm performance. The earlier the firm collects its outstanding debts from customer the better the firm performance in terms of profitability. Inventory conversion period has positive relationship with firm performance. It shows that lower level of inventory and fast movement of inventory increase the firm performance. Accounts payable period on other hand has positive relationship with firm

performance. Firms with lower level of profit should able to pay off their outstanding debts in order to increase the firm performance quality. Cash conversion cycle is positively related to firm performance, implying that quicker conversion of cash increases the firm performance. Lastly, the current ratio shows strong positive relationship with firm performance. It shows that it is necessary for firms to maintain a satisfactory level of current ratio to meet its short term obligations.

5.3 Limitations of the Study

Since the main purpose of this study is to determine the relationship of working capital management and financial performance of firms listed on Bursa Malaysia. There were difficulties in finding some data for certain firms. Disclosure financial information does not give exact value of certain variables. There were challenges in discovering information for specific firms.

The findings of the study may not be generalized to all organizations. Working capital continuously changes from period to period contingent upon prevailing monetary circumstances and market. The findings accordingly may not mirror the genuine impact of working capital on all firms listed in Bursa Malaysia

5.4 Implications of the study

This study has contributed to the literature review on the relationship of working capital management and firm performance for firms listed on Bursa Malaysia. It has extended the current knowledge of working capital and its influence on firm performance. The findings will help both academicians and practitioners on the actual concept of working capital towards firm performance. In general, the findings have shown that the management of working capital can influence firm performance. The practitioners may use the findings to set a standard measurement for working capital management. Taking a longer period to settle current liability, which has been a practice for many firms to retain the cash for other investment, actually reduces the firm performance. Taking time to settle short term obligation is not an issue but taking too long reduces the performance. Maintaining a moderate current ratio will be another crucial decision for a firm. Higher current ratio is never good for firms; it just shows inefficient cash management. Through the finding and regression analysis, there is a moderate relationship between working capital and firm performance in Malaysia.

5.5 Recommendations for future studies.

The study recommends that there should be proper management of short term financing strategies. The firm managers should have proper application of short term financing strategies. The choice of short term financing should allow proper usage of cash for investment. Firms should clearly decide between flexible and

restrictive strategy. Higher current ratio shows inefficient use of cash for future investment. Keeping higher current asset without proper investment will never contribute to the high performance of firms. In term of data analysis, many studies have been conducted over the world to identify the relationship of working capital management and firm performance. Different researchers have different result based on the data sample they have collected. There is no similar result generated from all the studies. As a recommendation for future research, it is recommended to do a comparison study of working capital among industry and sector as well as country to identify the factor which influences the relationship of working capital and firm performance. The accounting standard practice by the firm should also be analyzed as well to find out factors or changes in accounting practice which influence the working capital management. The limitation of ratio analysis should be taken into account to consider the factors influencing working capital relation with firm performance. Finally it is suggested that a comparison study among industry will give a clear picture of the working capital relationship with firm performance.

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APPENDIX A

	ROA	ACP	ICP	APP	CCC	CR
Mean	0.201782	118.8300	121.8523	116.3277	124.0035	1.180312
Median	0.240000	119.3200	123.7886	120.7518	121.4950	0.523000
Maximum	1.250000	271.0980	297.4779	286.6804	299.3868	10.04089
Minimum	-2.892189	10.00652	10.03553	10.29587	10.07776	-2.892189
Std. Dev.	0.504383	42.08196	40.24159	42.22513	51.72143	2.059712
Skewness	-1.20723584	-0.118261	-0.177565	-0.234890	0.188889	1.07833055
Kurtosis	1.12676223	1.82794496	1.91965460	1.50241599	1.73167701	1.66679432
Jarque-Bera	3982.437	42.01465	55.07329	26.80985	12.16708	2213.219
Probability	0.000000	0.000000	0.000000	0.000002	0.002280	0.000000
Sum	274.4233	161608.8	165719.1	158205.7	168644.8	1605.224
Sum Sq. Dev.	345.7325	2406641.	2200745.	2423045.	3635469.	5765.437
Observations	1360	1360	1360	1360	1360	1360

Covariance Analysis: Ordinary
Date: 08/10/19 Time: 22:38
Sample: 2012 2016
Included observations: 1360

Correlation Probability	ROA	ACP	ICP	APP	CCC	CR
ROA	1.000000 -----					
ACP	0.047435 0.0000	1.000000 -----				
ICP	0.042527 0.0000	-0.126947 0.0000	1.000000 -----			
APP	0.008930 0.7421	0.302550 0.0000	0.281819 0.0000	1.000000 -----		
CCC	0.081706 0.0026	0.463826 0.0000	0.444176 0.0000	-0.340147 0.0000	1.000000 -----	
CR	0.300425 0.0000	0.006303 0.8164	0.095175 0.0004	0.070183 0.0096	0.029348 0.2795	1.000000 -----

Dependent Variable: ROA
Method: Panel Least Squares
Date: 08/10/19 Time: 22:44
Sample: 2012 2016
Periods included: 5
Cross-sections included: 272
Total panel (balanced) observations: 1360

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.035920	0.059719	0.601481	0.5476
ACP	-0.012390	0.002313	-5.356832	0.0000
ICP	-0.012758	0.002322	-5.493991	0.0000
APP	0.012562	0.002299	5.464344	0.0000
CCC	0.013287	0.002316	5.736542	0.0000
CR	0.071021	0.006307	11.26001	0.0000

R-squared	0.615522	Mean dependent var	0.201782
Adjusted R-squared	0.592256	S.D. dependent var	0.504383
S.E. of regression	0.475230	Akaike info criterion	1.354368
Sum squared resid	305.7926	Schwarz criterion	1.377376
Log likelihood	-914.9701	Hannan-Quinn criter.	1.362981
F-statistic	35.36947	Durbin-Watson stat	0.683256
Prob(F-statistic)	0.000000		