WORKING CAPITAL POLICIES AND FIRM PERFORMANCE

BY

MAIZATUL ASHIKIN BT ABDUL KARIM

Thesis Submitted to

Othman Yeop Abdullah Graduate School of Business,

Universiti Utara Malaysia,

in Fulfillment of the Requirement for the Degree of

Master of Science in Finance

PERMISSION TO USE

In presenting this dissertation in partial fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this dissertation in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor or in their absence, by the Dean of Othman Yeop Abdullah Graduate School of Business where I did my dissertation. It is understood that any copying or publication or use of this dissertation parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation.

Request for permission to copy or to make other use of materials in this dissertation in whole or in part should be addressed to:

Dean of Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

ABSTRACT

This study is conducted to examine the relationship between the working capital components (ACP, APP, ICP and CCC) and the working capital policies (AIP, CIP, AFP and CFP) with the firms' performance (ROA, ROE and Tobin's Q). This study takes place from 2008 until 2012 and was examined on six sectors listed in Bursa Malaysia which are the construction, consumer products, industrial products, plantations, properties and also trading and services. Ordinary least squares regression and fixed effect model have been used to estimate the relationship between variables. The results showed that different sector may give different results in determining the relationship between the working capital and the firms' performance. Working capital components and firms' performance is negatively related and it can be found in plantations, properties and trading and also services sectors. However, all the sectors showed that working capital policies will impact the firms' performance except the plantations sector.

Keywords: **Sector, working capital components, working capital policies and firm performance**

ABSTRAK

Kajian ini dijalankan untuk mengkaji hubungan di antara komponen modal kerja (ACP, APP, ICP dan CCC) dan polisi modal kerja (AIP, CIP, AFP dan CFP) dengan prestasi syarikat (ROA, ROE dan Tobin Q). Kajian ini dijalankan dari tahun 2008 hingga 2012 dan meliputi enam sektor yang disenaraikan di dalam Bursa Malaysia iaitu pembinaan, barangan pengguna, barangan industri, perladangan, hartanah dan perdagangan dan perkhidmatan. OLS dan FEM digunakan untuk menentukan hubungan di antara pembolehubah. Hasil kajian menunjukkan bahawa sektor yang berbeza memberikan keputusan yang berbeza dalam menentukan hubungan antara modal kerja dan prestasi syarikat. Hubungan di antara komponen modal kerja dan prestasi syarikat di sektor perladangan, hartanah dan perdagangan dan perkhidmatan adalah negatif. Sementara itu, kesemua sektor kecuali sektor perladangan menunjukkan bahawa polisi modal kerja akan memberi kesan kepada prestasi syarikat.

Katakunci: Sektor, komponen modal kerja, polisi modal kerja dan prestasi syarikat.

ACKNOWLEDGEMENT

First and foremost, I would like to express my deepest gratitude to Allah for the strength, peace of mind, good health and ability granted, in order to complete this dissertation. Secondly, I would like thank to my parents for their love and support throughout my life. I would also to take this opportunity to sincerely thank to my supervisor, Associate Professor Dr. Rohani Md Rus for her guidance to complete this dissertation. The support, advice and concern truly help in the progression of this dissertation. Lastly, to all of my friends, thank you for their understanding and encouragement. May Allah Almighty bless all of you endlessly with his barakah.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ACP	Average collection period
AFP	Aggressive Financing Policy
AIP	Aggressive Investment Policy
APP	Average payable period
BSE	Bombay Stock Exchange
CATAR	Current asset to total assets ratio
CCC	Cash Conversion Cycle
CFP	Conservative Financing Policy
CIP	Conservative Investment Policy
CLTAR	Current liabilities to total assets ratio
CR	Current Ratio
D(AFP)	Dummy for aggressive financing policy
D(AIP)	Dummy for aggressive investment policy
D(CFP)	Dummy for conservative financing policy
D(CIP)	Dummy for investment policy
Dcrisis	Dummy for crisis
EBITDA	Earnings before interest, taxes, depreciation and amortization
FEM	Fixed effect model
GDP	Gross Domestic Products
GOP	Gross operating profit
ICP	Inventory conversion period
KSE	Karachi Stock Exchange
MFP	Moderate Financing Policy
MIP	Moderate Investment Policy
NPV	Net Present Value
OLS	Ordinary least square
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROIC	Return on Invested Capital

SPSS	Statistical Package for the Social Science
TQ	Tobin's Q
U.S.	United States
VIF	Variance Inflation Factors

CHAPTER 1

INTRODUCTION

1.1   Background of the study

Working capital management is believed to be a crucial component of any firm's decision making as it influences the firms' entire performance especially during uncertain economic situations. In India, Ernst and Young (2014) noticed that the companies have performed badly in their working capital management compared to their global counterparts. In fact, the survey was conducted among the top 500 Indian companies and the results showed that cash cycle of Indian companies were much longer with 67 days compared to other countries (U.S. 42 days, Europe 41 days, Japan 57 days and 39 days in Asian countries). Besides, Ernst and Young (2014) also stressed that different results in the cash cycle may be due to the macroeconomic factors which are the volatility of exchange rates and the commodity prices. The weaken rupees against other major currencies in 2013 had weaken the firms' performance as it affected EBITDA/sales ratio with the declining rate of 0.8% compared to 2012. This report is contentious regarding how well the firms in other countries adopting working capital management efficiently. It is because of firms in developed and developing countries might be adopting different strategy especially in encountering problems in the economic cycle.

Previously, the two crises which happened in 1997 and 2008 had impacted most of Asian firms. The economic shock in 1997 which was due to the depreciating Thai baht currency had entirely affected the firms. In

Malaysia, the Asian financial crisis had grabbed attention of most researchers because it gave a large impact to the Malaysian firms as the share price of listed firms had slumped drastically and many firms had recorded negative earnings. The construction and service sectors were largely affected during the Asian financial crisis (Ariff and Abu Bakar, 1999). The crisis occurred as result of the decrease in aggregate demand and deficiency in managing working capital (Claessens *et al.*, 2000). Inefficiency in managing working capital will lead to deterioration in credit rating, potentially forced liquidation of assets and also the possibility of bankruptcy. Therefore, it can be concluded that working capital management is a crucial part in a firm's operations as it could give an impact to the firm's liquidity. Moreover, liquidity problem might occur in a firm if the companies fail to pay their short term debt, delaying payments, not able to collect receivable within the period given or if there are not able to convert their finished goods to sales (Chaklader and Shrivastava, 2013). During the global crisis in 2008, most firms were not performing well especially when it came to fulfil their short term obligations. The global financial crisis had opened their eyes thus creating awareness of their actual financial crisis and therefore managers were more precautious, as a result, they gave more attention to the working capital management.

A study conducted by Weinraub and Visscher (1998) found that different sectors managed their working capital differently due to their different business activities. For example, current assets in the U.S manufacturing firms comprises of 40% of their total assets while the wholesaling and retailing firms current assets are estimated between 50 to 60 % (Moyer *et al.*, 2009). The wholesaling and retailing sectors have higher

current asset because they need to have a high inventory level compared to the manufacturing sector. Many firms could not sustain in the industry due to the bad short term decision made by manager.

The importance of working capital management to a firm can be related to the pecking order theory and the agency theory. The pecking order theory implies that companies will use internal financing before they use financial leverage either by borrowing or issuing equity. This can be done by using aggressive working capital strategy which is lowering the current asset such as reducing the inventory level to the minimum and decreasing the receivable amount in a firm (Palombini and Nakamura, 2012). The agency conflict might occur if there is low level of monitoring in the management decision. The managers might decide either to invest in positive or negative net present value project and later on will affect the investment decision by adopting more flexible working capital policy (Palombini and Nakamura, 2012). Wrong decision making will affect the firms' profitability.

Therefore, working capital management is a crucial part in decision making for a firm because it composes the decision of investing in current assets and sources of financing in its current assets (Garcia *et al*., 2011). A company's operation may run smoothly if they manage their working capital efficiently. An optimal level of working capital would be possible if a company could balance the risk and efficiency. Managing working capital efficiently with zero level in net working capital is an ideal level and can be achieved by improving both current assets and current liabilities management (Levy, 1998).

1.2   Problem statement

In theory, low working capital level are less liquidity and a firm with less liquidity would invite more risk as the firm may not have enough current assets to finance their current liabilities or any sudden need of working capital. Therefore, efficient management of working capital is crucial for a firm to maintain its daily operations in order to obtain higher profit. Trade-off theory always state that higher risk in investment will lead to higher return in future. This theory could be used in the working capital management since higher liquidity risk in working capital management would probably give higher profit to a company due to the opportunity cost such as lower interest cost and lower warehousing cost. However, most literature has given different results between theory and practice.

A company with a shorter inventory turnover period will invite the risk of stock out which are the failure to supply the customers' needs for that particular order and the company will have to stop production due to the shortage of raw materials (Mclaney, 2000). The shorter turnover in inventory is cost benefited because lower carrying cost such as cost of storage and insurance cost which later will contribute to higher profit of the company. Moreover, quick selling goods shows that the company is efficient in managing their working capital as the products have been sold out, thus reducing the potential of the obsolete products in the future. Most of the studies have found negative relationship between the inventory conversion period and the firms' profitability. However, they also found positive relationship between them (Abuzayed (2012), Azam and Haider (2011), Nimalathasan (2010), Chhapra and Naqvi (2012) and Panigrahi (2013)). Inventories are held to smooth the

production and the hedge against the price increment. Thus, some companies would prefer to hold the inventories in longer period of time. A study on these variables should be carried out due to the conflict of results.

A company should speed up in collecting their receivables from customers as to avoid bad debts. However, a company may lose its opportunity in making the interest free-loan (Mclaney, 2000). Many researchers have found negative relationship between the average receivable period and the firms' profitability. However, other studies had found the positive relationship between those variables. Among them are: Nzioki *et al.* (2013); Abuzayed (2012); Sharma and Kumar (2011); Azam and Haider (2011); Chhapra and Naqvi (2012); and Panigrahi (2013). The conflict whether to speed up the accounting receivable collections or to grant a longer credit policy to customers arises because of different policies are applied in different sectors. For instance, Azam and Haider (2011) studied the cement industry, while Chhapra and Naqvi (2011) conducted a study in the textile industry. The results of this study revealed a positive relationship. In contrast, a study conducted by Mumtaz *et al.* (2013) found a negative relationship in the chemical sector. In addition, some studies found a negative relationship between those variables whenever the researchers conducted the study by using all industry listed as sample. Therefore, a study on average collection period should be done because it is one of the components in the working capital management that would give impact to firms' profitability. Many studies should be carried out due to some arguments between the industries that are either to give a longer period in collecting debts or to speed up in the debt collection.

Delaying payment to the suppliers would benefit the company because they can assess the product quality and there is also another cost benefited since it could be a low-cost financing for a firm (Garcia *et al*., 2011). Literature that have found positive relationship between the average payable period and the firms' profitability are Ukaegbu (2014); Nzioki *et al*. (2013); Azam and Haider (2011); Chhappra and Naqvi (2012); Panigrahi (2013) and Vishani and Shah (2007). However, a firm may lose its opportunities in having a discounted rate if it keeps delaying the payment of accounts payable until a certain period of time. Among the studies which had found negative relationship between the average payable period and the firms' profitability are Mansoori and Muhammad (2012); Garcia *et al*. (2011); Deloof (2003); Vahid *et al.* (2012); Akinlo (2012); Abuzayed (2012); Sabri (2012); Karaduman *et al.* (2010); Sharma and Kumar (2011); Korankye and Adarquah (2013); Charitou *et al*. (2010); Napompech (2012); Mumtaz *et al*. (2013); Bieniasz and Golas (2011); and Bellouma (2011).

A firm may prefer either to have a longer or a shorter conversion cycle. A shorter period in cash conversion cycle might affect the firms' profitability negatively because reducing the inventory turnover period will attract higher shortage cost. On the other hand, speeding in collecting the receivable will lose their potential credit customers' and delaying the firm's payable might affect the credit reputation of a firm (Garcia *et al*., 2011). However, most of researchers found that when a firm practices a short conversion cycle, it would lead to the increment in its profitability (Mansoori and Muhammad, 2012; Garcia *et al*., 2011; Deloof, 2003; Ukaegbu, 2014; Nzioki *et al.*, 2013, Mohamad and Saad, 2010; Sabri, 2012; Karaduman *et al*., 2010, Nimalathasan,

2010; Charitou *et. al.*, 2010, Napompech, 2012; Mumtaz *et al.*, 2013; Bieniasz and Golas, 2011; and Bellouma, 2011). Meanwhile, a longer cash conversion cycle will increase the firms' sales and profitability because large inventories will reduce the out of stock risk and offering the liberal trade credit policy will retain a good relationship between customers (Garcia *et al.*, 2011). The positive relationship between the firms' profitability and the cash conversion cycle were found in studies by Gill *et al.* (2010), Garcia *et al.* (2011), Abuzayed (2012), Sharma and Kumar (2011), Azam and Haider (2011), Chhapre and Naqvi (2012) and Panigrahi (2013).

The conflicting results between the working capital components and the firms' profitability keep arousing from time to time. Some literatures found that working capital management supported the trade-off theory by showing a negative relationship between the working capital components and the firms' profitability. However, the positive relationship is also found between the liquidity and the firms' profitability which contradicted with the theory. Therefore, a study in this area should be carried out to understand the issue, especially in the Malaysian context.

However, there are fewer studies which have examined the working capital components and the firms' value. In addition, other studies did not find any significant results (Pouraghajan and Emamgholipourarchi, 2012; Abuzayed, 2012). Market to book ratio also has been used as a proxy for the profitability. Forghani *et al.* (2013) using this measure has found positive relationship between the working capital management and the firms' profitability.

The perspective among the shareholders' should also be taken into account because most of them prefer to have higher risk which may be translated to higher return. Thus the shareholders would put a higher value if the firms used aggressive strategy in managing current liabilities (Afza and Nazir, 2009). Since there is only limited number of literature on the working capital management that would affect the market performance, making this study is carried out to investigate the relationship between the working capital management and the firms' profitability from the market perspective.

Long term financial decision will largely affect the firm more than the short term financial decision. However, the short term financial decision could also affect a firm spontaneously. For example, the increment in sales would probably increment spontaneous items (account receivables, accounts payable and inventories) and a firm might change its short term financing policies due to this reason. Therefore, working capital area is an interesting topic since it may contribute to the factor of the firms' profitability as well as firm's distress. Some researchers who conducted studies on the determinants of working capital management also showed that firm size affecting the working capital management. However, there are only few studies on differences in aggressive and conservative working capital policies (Weinraub and Visscher, 1998; Afza and Nazir, 2009).

Firms that used aggressive working capital policies would have lower level of current assets or they may employ a higher level of current liabilities in their financing decisions (Afza and Nazir, 2009). The aggressive financing policy of a firm will bear higher interest rate risk because the firm will use the short term debt rather than the long term debt. However, a company may have

benefits on the short term debt since the short term interest rate will result in a lower amount of interest as compared to the long term interest amount. Whereas, a company that used the conservative working capital approach would secure a competitive return by taking more long term debt or investing more on the current assets. Therefore, this study is carried out in order to know whether the firms within the industry use the aggressive or the conservative working capital policies.

The controversy of the results would probably originate from the sample used in the study which is whether the sample is from developed or developing countries. Previous studies conducted in developed countries (Gill *et al*., 2010; Garcia *et al*., 2011; Mansoori and Muhammad, 2012; and Deloof, 2003) and studies in developing countries by Abuzayed (2012), Sabri (2012), Vahid *et al*. (2012), Pouraghajan and Emamgholipourarchi (2012), Ukaegbu (2014), Mohamad and Saad (2010), Karaduman *et al*. (2010), Akinlo (2012), Korankye and Adarquah (2013), Azam and Haider (2011), Sharma and Kumar (2011), and Arunkumar and Ramanan (2013) revealed that different results on firms' practices in managing their working capital components. The relationship between the working capital management and the firms' profitability is mostly found in sample of firms in developed countries rather than in the developing countries.

There is a possibility that the insignificant relationship and mixed evidence are due to the different methods used to examine those relationships. Most studies had used Ordinary least square. However, there are several number of studies which used different methods, fixed effect model (Deloof, 2003; Ukaegbu, 2014), generalised least square (Garcia *et al*., 2011), weighted

least square (Gill *et al*., 2010; Arunkumar and Ramanan; 2013), Canonical Correlation Analysis (Azam and Haider, 2011) and random effect model (Usama, 2012). Mixed results are also found when the researchers use different period of the study. Palani and Mohideen (2012) had suggested that further studies should be carried out using different period of study because the volatility in economic condition throughout the period of study will affect the findings differently.

Some researchers employed different variables in their study which used gross operating profit to measure the firms' profitability rather than the return on assets. To measure the working capital management, most of them used account receivable period, account payable period, inventory period and cash conversion cycle. However, there are also researchers who use net liquidity balance and net trade cycle to measure the working capital.

A study on working capital in Malaysia should be carried out because it is still far from perfection. There were only three literatures had studied on the working capital management which are Nasser *et al*. (2006), Mohamad and Saad (2010), and Wasiuzzaman and Arumugam (2013). Moreover, different variables and period of study may give different results as some previous studies discover. Furthermore, the working capital area in Malaysian context were only discussed on the construction sectors (Nasser *et al*., 2006) while the other two studies looked at various sectors listed in Bursa Malaysia. A study on individual sector practices should be investigated as well because a study by sub-sectors will show different practices used among companies. For example, consumer in the electric industry (Vishnani and Shah, 2007), manufacturing firms (Korankye and Adarquah, 2013; Arunkumar and

Ramanan, 2013), food sector (Usama, 2012) and financial sector (Al-Shubiri, 2011).

1.3   Research questions

1) There is no relationship between the firms' performance and the working capital components (ACP, APP, ICP and CCC) across six sectors listed in Bursa Malaysia from 2008 to 2012.

2) There is no relationship between the firms' performance and the working capital policies (AIP, CIP, AFP and CFP) across six sectors listed in Bursa Malaysia from 2008 to 2012.

1.4   Research objectives

1) To examine the relationship between the firms' performance and the working capital components (ACP, APP, ICP and CCC) across six sectors listed in Bursa Malaysia from 2008 to 2012.

2) To examine the relationship between the firms' performance and the working capital policies (AIP, CIP, AFP and CFP) across six sectors listed in Bursa Malaysia from 2008 to 2012.

1.5   Significance of study

This study will provide an empirical analysis on the working capital components and also the working capital policies. Working capital components comprised of average receivable collection, average payable period, inventory conversion period and cash conversion cycle. Whereas, working capital policies provide the approach or strategies used by firms in constructing the

working capital management. The approach will either be aggressive or conservative. The comprehensive explanation on the working capital practices by Malaysian firms will contribute to the future research for the academicians, managers and professionals.

CHAPTER 2

LITERATURE REVIEW

2.0   Introduction

The topic in working capital management has become popular among the western countries (Mohamad and Saad, 2010) and many studies were also being carried out in the developing countries in order to understand whether the results that appear in the developed countries can be applied in the developing countries.

Different perspectives on the importance of working capital management have induced many researchers to investigate this issue. For instance, some researchers focused on using the gross operating profit as one of their variable while others prefer using return on asset (ROA) as one of the variable in assessing the firm's working capital. By using the gross operating profit, the focus of the study lies more on the efficiency of the firm's operation in generating the profit while assessing the ROA focus on the capabilities of the management of the firm in turning the asset owned by the firm's into profit. Other variable that is used to assess the firm's working capital management are the net trade cycle, the net liquidity balance and the cash conversion cycle. Meanwhile, to assess the firm's profitability, researchers used net operating profitability, gross operating profitability and return on equity as one of the main indicators in the related studies. In addition, to measure market performance related to the firm's working capital management, variables such

as market to book ratio and Tobin's Q also has been used in assessing a firm's working capital management.

Clearly, to assess the firm's working capital, researcher may use different variables and indicators depending on the goal or objective of the study. However, in many studies, the direction of the relationship between the working capital management and the firm's profitability are still yet to be determined. The gap opened the interest of the researchers to further study in the field of working capital, for instance, whether the profitability affect the firm's working capital decision or the other way around. This chapter will discuss about the Trade-off theory which is related to the relationship of working capital management and profitability, the relationship between working capital policies and profitability and finally discuss the working capital management decision that is related with profitability. The details of the mentioned theory are as the following:

2.1   The trade-off theory

The trade-off theory is among the popular theory that was discussing on the relationship between a firm's working capital management and the profitability. Among the studies that discuss the trade-off theory are Afza and Nazir (2009), Bellouma (2011), Bei and Wijewardana (2012), Napompech (2012), Bolek (2013) and Ukaegbu (2014).

One of the important elements in working capital management is the firm's liquidity of the asset. Trade-off theory balances the liquidity of the asset and the profitability of a firm (Bellouma, 2011). To create this balance, a firm

may require a planning on their working capital structure carefully, and inefficiency in their working capital management may results liquidity crisis and also reducing the profitability of a firm (Ukaegbu, 2014). For instance, in managing the liquidity of a firm's asset, a high inventory turnover resulted from high efficiency in managing a firm current asset would provide a cost advantage to the firm, such as saving from the carrying cost which can be then translated into profit.

According to Bei and Wijewardana (2012), the decision in managing the current assets and liabilities that are dependent on the trade-off theory are the working capital policies. Thus the three strategies that will be discussed in the next section that related to the trade-off theory are the moderate, conservative and aggressive working capital policies.

2.2   Working capital policies

In working capital policies, three strategies or approach related to the risk and return in trade-off theory are the aggressive approach, the moderate approach and the conservative approach. The details for every approach are following:

2.2.1   Moderate approach

Moderate approach is a financing strategy that matches the maturity structure of the firms' liabilities and the life span of the firms' assets. This approach used long term debt and equity to finance firm's fixed and permanent current assets, while short term debt will be used to

finance the fluctuating current assets. The illustration of moderate approach shown in Figure 2.1 below:

Figure 2.1 Moderate Approach

Total assets

Fluctuating Current Assets   STD

Permanent Current Assets   LTD

+ Equity

Fixed Assets

Time
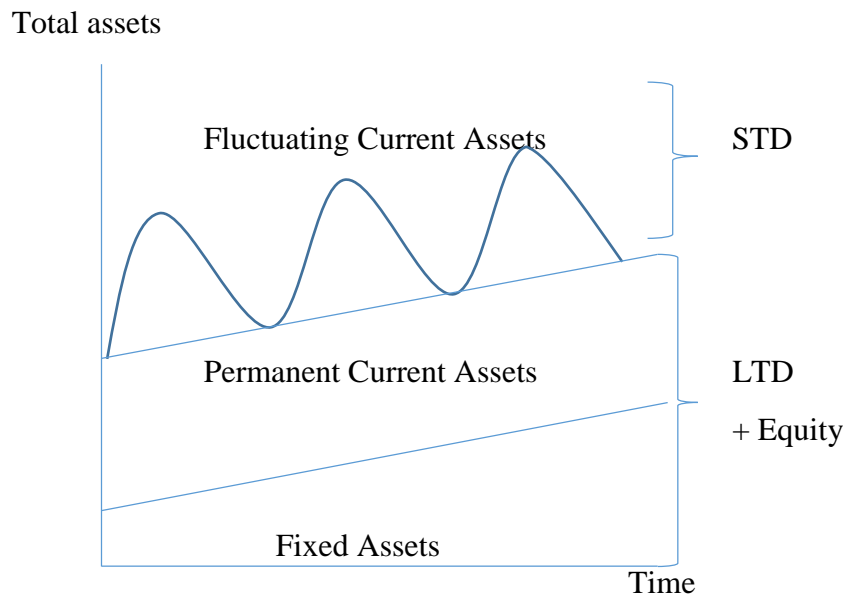
Source: Moyer *et al.* (2009)

2.2.2 Conservative approach

In conservative approach, firm would prefer to use long term debt rather than taking a short term debt. This conservative approach is normally used by the firm that prefer low risk in their working capital structure. This approach would reduce the risk of not being able to refund firms' debt and also reduce the risk that occurred from the interest rate fluctuations. The downside of this approach is that the firm may incur a high cost in long term debt resulted from the increment in the interest rate, which is usually greater than the short term debt. The illustration of conservative approach is shown in Figure 2.2 below:

Figure 2.2: Conservative Approach

Total assets
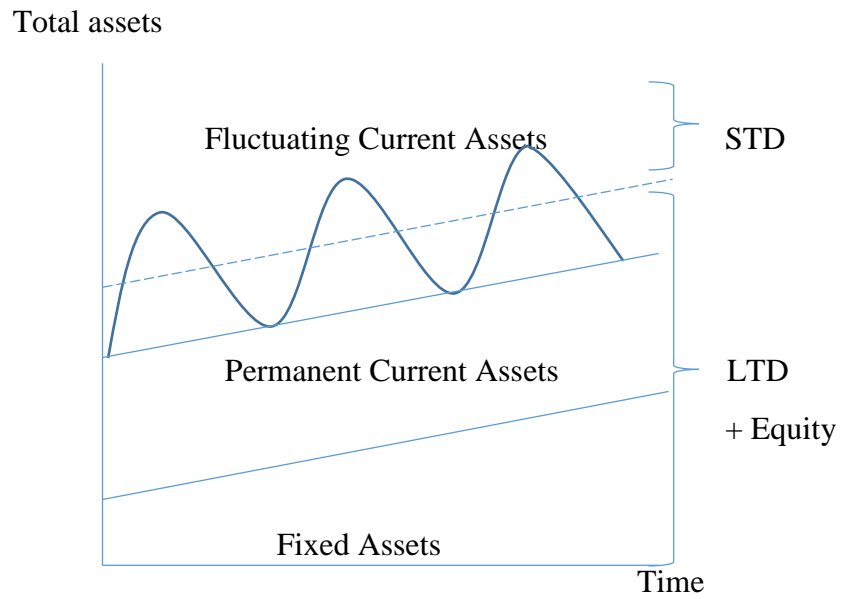
Source: Moyer *et al.* (2009)

2.2.3 Aggressive approach

On contrary to the conservative approach, a firm that use the aggressive approach would rather have greater level of short term debt compared to long term debt in their capital structure. This approach may require the firm to refinance its short term debt more frequently and therefore the firm would face a higher risk, which are the risk of not being able to obtain new financing at a lower cost and the risk of interest rate fluctuation. However, the advantage of this approach is that the firm will get a higher profit by using a lower cost from the short term financing. The illustration of aggressive approach is shown in Figure 2.3 below:

Figure 2.3: Aggressive Approach

Total assets

Fluctuating Current Assets

STD

Permanent Current Assets

LTD

+ Equity

Fixed Assets

Time
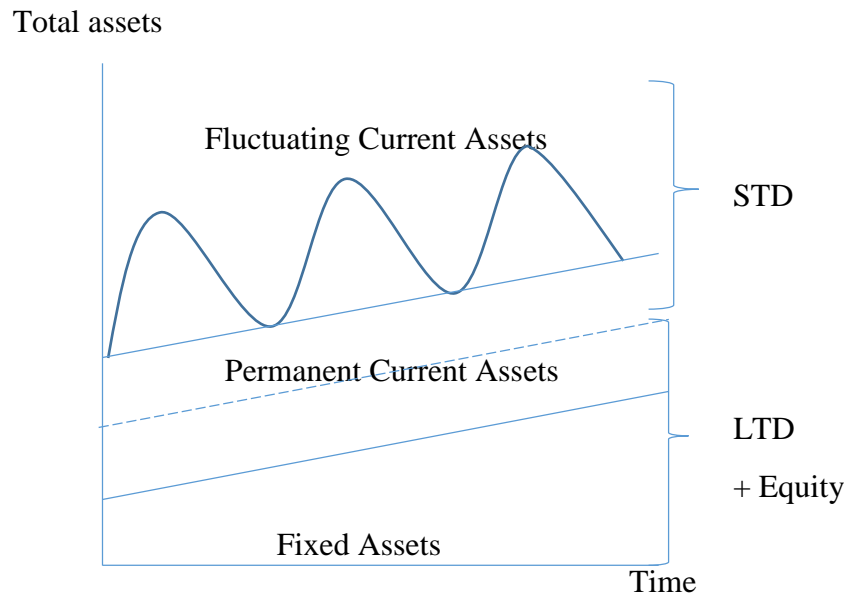
Source: Moyer *et al*. (2009)

2.3   Working capital policies and profitability

This section reviewed literature on the relation between the working capital policies and the profitability of a firm. The earlier study on the working capital policies using the aggressive and conservative approach was conducted by Weinraub and Visscher (1998). This study was conducted to examine the industry practices on the working capital policies where they employed 10 diverse industry groups with total of 216 U.S. firms as a sample for the period from 1984 to 1993. They found that industry practices were significantly different in the degree of aggressiveness in the asset management and the degree of aggressiveness of the liabilities management. They also found that the practice of aggressiveness in the asset management between industries is stable over the ten years of study period. However, the study found no significant result in the stability practices of aggressiveness in liabilities management over the period of study.

Moreover, Salawu (2006) studied the relationship between the aggressive and conservative working capital practices across 15 industrial groups in Nigeria. The objective of the study was to examine the degree of aggressiveness in the working capital policies (AIP and AFP) among industries, the stability of the working capital practices and the existing relationship between the aggressive investment policy and the aggressive financing policy. 42 listed firms in Nigeria Stock Exchange were selected as a sample in the study for the period from 1994 to 2003. Using one-way ANOVA and Turkey's HSD tests, result showed that the working capital policies among industries in Nigeria were significantly different over the period of the study. Salawu also found that the working capital policies (AIP and AFP) were stable over the 10 years but there were also negative relationship between the degree of aggressiveness of investment policies and the degree of aggressiveness of financing policies.

The study on working capital policies was continued by Afza and Nazir (2007, 2008, 2009) where they carried out several studies regarding the working capital policies. Afza and Nazir (2007) used 208 non-financial firms as the samples that cover the period from 1998 to 2005. They used ROA, ROE and Tobin's Q as a proxy for the firms' performance and AFP and AIP as the independent variables. The study also conducted to examine the relationship between the working capital policies and the risk. The standard deviation of sales, standard deviation of ROA, standard deviation of ROE and also standard deviation of Tobin's Q were used as the proxy of risk in this study. They found that the degree of aggressiveness of the working capital policies (AIP and AFP) was significantly related with firms' profitability based on the ROA. However,

mixed results emerged when the performance was measured by using the ROE and the Tobin's Q. The ROE model showed that the degree of aggressiveness of the working capital policies (AIP and AFP) was negatively related which was similar to ROA. Meanwhile, Tobin's Q showed a positive relationship on the degree of aggressiveness of the financing policies. However, the findings showed that the relationship between risk and degree of aggressiveness of the working capital policies (AIP and AFP) were insignificant.

Afza and Nazir (2008) used 263 non-financial listed firms from Karachi Stock Exchange for the period 1998 to 2003. Their study covered 17 industrial sectors. The variables used in the study were ROA and ROE as a proxy for the firms' profitability, and AFP and AIP as the independent variables. This study found that AFP and AIP was significantly different across the industries and were stable within the period of study. They also found that there was a negative relationship between the degree of aggressiveness of working capital policies (AIP and AFP) and the firms' profitability.

In order to get more significant result between working capital policies and firms' profitability, Afza and Nazir (2009) had conducted another study by using the control variable. The control variables used in the study were sales growth, financial leverage and firm size. The study found negative relationship between the degree of aggressiveness of working capital policies (AIP and AFP) and the firms' profitability as measured by ROA and ROE. On contrary, when Tobin's Q was used as a proxy for firms' profitability, the result was significantly positive.

Al-Shubiri (2011a) examined the risk factor in the working capital policies. He had investigated the relationship between the aggressive and conservative working capital policies from year 2004 until 2007 by using 59 industrial companies listed in Amman Stock Exchange. Author used return on assets, return on equity and Tobin's Q as proxy for profitability and the independent variables used were the AIP and AFP. A series of yearly data was then regressed and the findings were similar to Afza and Nazir (2007, 2008, and 2009). However, there was a conflict in results Tobin's Q model. For the year 2004, the relationship was positively significant between Tobin's Q and AIP, but when tested for the whole period (2004 to 2007), the results showed a negative relationship. The analysis on the relationship between risk and working capital policies were conducted but no significant relationship emerged between these variables.

In another study, Al-Shubiri (2011b) added financial sector in the sample. The sample period is from year 2007 to 2008. He conducted the study by adding the return on capital (ROC) and return on investment (ROI) to measure the profitability of a firm. He had degenerated the data separately one by one using all industrial companies and the other by using commercial banks. A more significant result was found for the industrial companies. All models (ROA, ROE, Tobin's Q and ROI) were found to be negatively significant between the practices of aggressiveness in the working capital policies and the firms' profitability. However, the return on capital (ROC) showed a mixed result towards the aggressiveness of practices in the working capital policies and the firms' profitability. There was a mixed result when commercial bank sample was used. Results from the study were similar with the previous

research on the relationship between the aggressiveness working capital policies and the firms' performance.

Onwumere *et al.* (2012) investigated the impact of working capital policies on profitability. The study used samples from year 2004 to 2008, and the samples were taken from the Nigerian Stock Exchange. One firm was selected from each sub-sectors. They used aggressive investment policy (AIP) and aggressive financing policy (AFP) as independent variables and return on assets (ROA) as the dependent variable. The control variables were size of firm and also the leverage. The results show that there were positive relationships between both AIP and AFP on profitability of a firm. These results were found to be contradicted with Afza and Nazir (2009), Al-Shubiri (2011) and Palani and Mohideen (2012).

Palani and Mohideen (2012) used 204 listed Indian firms in Bombay Stock Exchange for the period 2002 to 2010. Using the same variables as in previous studies, they also found contradicted results. This study showed a positively significant relationship between the CATAR from both ROA and Tobin's Q models. On the other hand, a negatively significant result emerged between the CLTAR and ROA. The results indicated that the aggressive working capital policies would decrease the Indian firms' profitability. However, when using Tobin's Q, there was a positive relationship between AFP and Tobin's Q which indicated that AFP would increase the firms' value. This study showed a similar finding with Afza and Nazir (2007, 2008, 2009) and also Al-Shubiri (2011). On the other hand, positive relationship between the degree of aggressiveness of working capital financing policies and the

firms' value indicated that the investors gave a higher value to the firms that employed aggressive financing policies.

A study conducted in Poland by Bolek (2013) examined the relationship between the three approaches (conservative, moderate and aggressive) and the firms' profitability. Bolek (2013) used sample of listed firms in Warsaw Stock Exchange from year 1997 to 2007. The study found weak evidence and showed that only moderate strategy was significant to the firms' profitability. By using Pearson Correlation, he found CATAR and CLTAR did not show the same direction in profitability as measured by ROA and ROE.

Bhutto *et al.* (2011) studied the relationship between the working capital components (ACP, APP, ICP and CCC) and the working capital policies (AIP and AFP). The study incorporated the working capital policies and profitability as the independent variable. The study was conducted by using a sample of one year period which in 2009 and used 157 non-financial Pakistani firms comprising of 12 sectors. The results revealed the existence of a negative relationship between the AFP and ROE with CCC. The authors also found a positive relationship between the AIP and ROA with CCC.

The effectiveness of the working capital management might be tested during the financial crisis. A company might plan their working capital management in order to achieve higher return as soon as possible. Chaklader and Shrivastava (2013) conducted a study to determine the impact of working capital policies on profitability during the global crisis. They used ACP, APP, ICP, CCC and CATAR as the independent variables. Meanwhile, the return on

assets was used as the only measurement for the firms' profitability in this study. 169 firms were selected from the BSE 500 and were used as samples in this study in the period of April 2008 until March 2011 which covered the period of global recession. The study showed significant results from all variables. ACP, APP and CATAR had positive relationship to the firms' profitability, while negative relationship was found from both ICP and CCC. The positive relationship between CATAR and ROA indicated that AIP was negatively related to the firms' profitability which was similar to the findings of Afza and Nazir (2007, 2008, 2009), Al-Shubiri (2011) and also Palani and Mohideen (2012).

Some researchers had conducted studies by looking precisely on the approaches in the working capital towards the firms' profitability. Bei and Wijewardana (2012) conducted a study on the working capital policies for two objectives. First, they examined the determinants of working capital across different working capital policies (conservative, matching and aggressive) and secondly, they examined the relationship between the firms' performance and the working capital policies by looking at their efficiency, liquidity, profitability and leverage. The study used 155 listed companies in Colombo Stock Exchange from year 2001 to 2006. The results were 23% of the sample practiced conservative working capital policy, 13% were practiced matching working capital policy while 64% firms were practicing aggressive working capital policy. They conducted a study by separating the working capital practices by the firms into three groups which were conservative, matching and aggressive. The study found that different working capital policies affect

differently in terms of their performance, profitability, liquidity and also the efficiency of firms.

2.4   Efficiency of working capital management and profitability

A study in developed and developing countries can give different results due to the different practices among the firms' in those countries. Moreover, different result may occur from different economic condition in a certain countries. Deloof (2003) conducted a study on 1,009 Belgian non-financial firms from year 1992 to 1996. He used the number of days in accounts receivable, number of days of inventories, number of days of accounts payable and cash conversion cycle as independent variables in this study. Meantime, gross operating profit is used as the dependent variable. The control variables used in this study are sales growth, financial debt, fixed financial assets and variability of income. The study used fixed effect model and OLS regression to examine the impact of the working capital management on the firms' profitability. The study found that working capital components (ACP, ICP, APP and CCC) are negatively significant to the firms' profitability andthe control variables are highly significant to the firms' profitability.

Gill *et al.* (2010) conducted a study on 88 American listed firms on the New York Stock Exchange (NYSE) from year 2005 to 2007. This study used working capital ratio (ACP, APP, ICP and CCC) as the independent variables and gross operating profit as the dependent variable. This study used different method in estimating the relationship which is the weighted least squares regression (WLS). They found a negative relationship between the receivable

conversion period and the firms' profitability, while positive relationship between the cash conversion cycle and the firms' profitability. However, the study did not find significant results in inventory conversion period and average payable period. These results contradicted the result from Deloof (2003) which found a negative relationship between the working capital components and the firms' profitability in all variables used.

A large sample may give more significant results. Garcia *et al.* (2011) studied on the impact of the working capital management on the profitability of European companies from year 1998 to 2009. The study used 2,974 non-financial firms listed in 11 European Stock Exchanges. The independent variables used in the study are the receivables collection period, inventory conversion period, payables deferral period and cash conversion cycle while gross operating profit was used as the dependent variable. They used GLS and OLS to estimate the relationship between the variables of the working capital components and the firms' profitability. Due to the large sample used, they found significant results for all the variables tested. They found a negatively significant relationship between the working capital components (ACP, ICP, APP and CCC) and the GOP. These results were contradicted with previous findings by Gill *et al.* (2010) who found that CCC and GOP are negatively related. However, the results for Poland were similar with Gill *et al.* (2010) when they conducted a test on each country. By using fixed effect model, APP did not give any significant result and therefore it showed that different method used might give different results.

Mansoori and Muhammad (2012) conducted a study to investigate the effects of the working capital management and the firm's profitability in

Singapore. The study used cash conversion cycle, account receivables, inventory conversion period and payable deferral period as the independent variables. The study used different proxy of profitability from previous studies (Deloof, 2003; Gill *et al*., 2010; and Garcia *et al*., 2011) which they used the return on asset. The control variables used was the firm size, leverage, sales growth and annual GDP. 92 listed firms in Singapore Stock Exchange were taken as a sample from year 2004 to 2011. This study which used the ordinary least square (OLS) and the fixed effect (FE) showed a negative relationship between the working capital components (CCC, ACP, APP and ICP) and the ROA in both OLS and FE model. Meanwhile, the control variables used in the model showed a positive relationship to the ROA except for the leverage where they found a negative relationship to the firms' profitability. Even though this study used different proxy for the firms' profitability, the study still found negative relationship between the working capital components and the firms' profitability which is similar to Deloof (2003) and Garcia *et al.* (2011).

Some researchers conducted studies on firms' in the developing countries. Mohamad and Saad (2010) did a study in Malaysia by examining the relationship between the working capital management and its effect on the firms' performance. They analysed the data by using 172 listed companies randomly selected from Bursa Malaysia from year 2003 to 2007. They employed working capital components as the independent variables which consisted of cash conversion cycle, current ratio, current asset to total asset ratio, current liabilities to total asset ratio and debt to asset ratio. Meanwhile, the dependent variables in the study were profitability which was measured by Tobin's Q, return on asset and return on invested capital. They found CCC, CR

and CLTAR to be negatively related to the firms' profitability which indicated that the length of CCC, the higher the liquidity and the higher the CLTAR would results on a negative return to the firm. CATAR had resulted on positive relationship to the firms' profitability. The debt to asset ratio however, showed mixed findings where it is positively related to the ROA, but negatively related to the ROIC.

Karaduman *et al.* (2010) studied the effects of the working capital management on profitability in the Turkish firms. 140 firms were randomly selected from the Istanbul Stock Exchange for the period of 2005 to 2008 to investigate the relationship between the independent variables (number of days account receivable, number of days account payable, number of days inventories and cash conversion cycle) and the dependent variable proxy by the return on assets. The control variables were the leverage, firms' size and real GDP growth rate. They found that the working capital components (ACP, ICP, APP and CCC) and the return on assets were negatively related. In addition, they found a negatively relationship between the leverage and the firms' profitability, while size of the firm and real GDP growth rate showed a significant positive relationship to the firms' profitability.

Charitou *et al.* (2010) examined firms in Cyprus from the period of 1998 to 2007. 43 listed firms in the Cyprus Stock Exchange were selected as a sample. They used the working capital components (ACP, ICP, APP and CCC), sales growth, size of firms and debt ratio as the independent variables while return on assets as the dependent variable. From the four model regressed, the results suggested that there was negative significant relationship between the working capital management and the firms' profitability.

Sharma and Kumar (2011) did a study in India where they chose 263 listed firms from the BSE 500 index as sample of study for the period of 2000 to 2008. This study used working capital components as the independent variables and ROA to measure profitability which was the dependent variable in the study. By using OLS regression to analyse the relationship, they found a positive relationship between the number of days account receivable, the cash conversion cycle and the ROA. On contrary, number of days account payable and number of day's inventory were found to be negatively related to the ROA.

Azam and Haider (2011) conducted a study to determine the relationship between the working capital and the firms' profitability by using a different method. They used the Canonical Correlation Analysis for this study. They used 21 firms from the KSE-30 Index for the period of 2001 to 2010. This study used nine independent variables which were the average collection period, inventory turnover, average payment period, cash conversion cycle, net trading cycle, gross working capital turnover ratio, current assets to total assets ratio, current liabilities to total assets ratio and current ratio. Meanwhile, return on assets and return on equity were used as the dependent variables in the study. From the Canonical Correlation Analysis, it was found that ROA was positively correlated (r = 0.6365) to the independent variables and ROE also showed positive correlation but less significant to the independent variables (r = 0.3466). They continued the study by using multivariate statistical and found that there was a significant impact of working capital management on the firms' performance.

Vahid *et al.* (2012) did a study using firms listed in the Tehran Stock Exchange (TSE). They conducted a study to examine the effects of working

capital management over the performance by using average collection period, days in inventory turnover, average payment period, cash conversion cycle and net trading cycle to measure the working capital management. The dependent variable used in the study is net operating profitability. The study used the samples of 50 firms listed in the TSE from year 2006 to 2009. The results showed that most of the working capital components (ACP, ICP, APP and NTC) had a negative relationship to the firms' profitability and there was no relationship between CCC and the firms' profitability.

Another study was conducted by using 80 listed companies in the Tehran Stock Exchange from year 2006 to 2010 to examine the relationship between working capital management and profitability by Pouraghajan and Emamgholipourarchi (2012). The study used cash conversion cycle, current ratio, current assets to total assets ratio, current liabilities to total assets ratio and total debt to total assets ratio as proxy of the working capital management. Meanwhile, the dependent variables used in the study are return on assets, return on invested capital and Tobin's Q. The study found that working capital management was significant to the firms' profitability measured by ROA and ROIC. The study also showed that CCC and debt to total assets ratio gave more significant result in determining the firms' profitability which affected negatively. However, the study done by Forghani et al. (2013) showed a positive relationship between the working capital management and the firms' profitability as measured by ROA, ROE and market to book the value ratio. The study used 56 companies listed in the Tehran Stock Exchange from year 2003 to 2007 and employed net liquidity balance as the proxy of working capital management.

Abuzayed (2012) studied the effects of the working capital management on the firms' profitability and value in Jordan. The study used a sample of 52 non-financial firms quoted in the Amman Stock Exchange from the period of 2000 to 2008. The independent variables in the study were working capital components while, control variables used in the study were size, sales growth, leverage, fixed financial assets to total assets, variability of net operating income and growth in GDP. Tobin's Q was used to measure the firms' value whereas gross operating profits were used as a measure of profitability of a firm. To get more significant findings, he conducted the analysis by using panel data analysis, fixed and random effects, and generalized method of moments. The study found that the working capital components (CCC, ACP, ICP and APP) show a significant relationship to the firms' profitability as measured by the gross operating profit. CCC, ACP and ICP have affected the firms' profitability positively whereas APP shows a negative relationship to the firms' profitability. However, Tobin's Q models did not give any significant result between the working capital components (CCC, ACP, ICP and APP) and the firms' value. Most of the control variables had shown significant results.

Napompech (2012) did a study using 255 listed firms on the Thailand Stock Exchange across 7 industries which were industrials, consumer products, technology, agro and food, resources, construction and buildings materials, and service from year 2007 to 2009. The study used working capital management components, firm size, fixed financial asset ratio and debt ratio as the independent variables while gross operating profit as the dependent variable. The study also assigned dummy variables to control possible industry effects.

Four models were regressed by testing on each working capital components (ACP, APP, ICP and CCC) to the firms' profitability. He found a negative relationship between the working capital components and the firms' profitability from these four models.

There were also several researchers who had preferred to conduct an analysis by focusing on a sector listed in the stock exchange. Different sectors could probably give different results due to the different practices among the industries and also the risk perception towards the working capital management. Vishnani and Shah (2007) had conducted a study on the Indian consumer electronics industry from year 1994 to 2004. The sample of study used 23 listed companies with four independent variables which were current ratio, inventory holding period, debtors' collection period, average collection period and net working capital cycle while return on capital employed is the dependent variable. The findings showed that 23 individual firms had showed mixed results whereby some firms gave positive relationship and some showed negative relationship. They found that only average payment period gave a positive relationship to the ROCE while a negative relationship shows from inventory holding period, average collection period and net working capital.

Nimalathasan (2010) had done a study in the Sri Lankan firms which resulted both positive and negative significant results. The study used debtors' conversion period, inventory conversion period, creditors' conversion period and cash conversion period as the independent variables and using return on assets as the dependent variable. The researcher used 31 manufacturing companies listed in the Colombo Stock Exchange from year 2003 to 2007 as a sample of study. There were only two independent variables that gave

significant results which were inventory conversion period and cash conversion period. The positive relationship was found between the inventory conversion period and the firms' profitability whereas the cash conversion period and the firms' profitability had showed negatively relation.

Sabri (2012) conducted a study in the Jordanian industrial companies. The study selected 45 listed companies in the Amman Stock Exchange as a sample from the period of 2000 to 2007. The study used ROA as the dependent variable in measuring firms' profitability, while inventory period, account payables period, account receivables period and cash conversion cycle as the independent variables which proxy to the working capital management. The researcher had divided each independent variable into two categories which are high indexes and low indexes to examine the relationship between each variable to the firms' profitability. From the study of 8 indexes, it showed that low indexes of independent variables produces higher ROA compared to the high indexes. The study concluded by accepting the alternative hypothesis according to which there was a different profitability with high indexes and low indexes of the working capital components (ACP, APP, ICP and CCC).

Chhapra and Naqvi (2012) had done a study on the textile industry in Pakistan. The study on 55 textile companies from year 2003 to 2008 had resulted on positive relationship between the working capital management and the firms' profitability. The similar result was shared in the cement industry done by Panigrahi (2013). The study employed five Indian cement companies listed in the BSE for the study period of 2000 to 2009. However, a study in chemical sector by Mumtaz *et al*. (2013) showed that the working capital management and the firms' profitability were negatively related. The study

used 22 firms in the chemical sector quote in KSE 100 index from period of 2005 to 2010.

A study done in the food sector by Bieniasz and Golas (2011) which used Poland, Germany, Belgium, Spain, France, Italy, Austria and Portugal as the samples of study. The study was conducted in year 2005 to 2009 and using working capital components as the independent variable. The study found negative relations between the working capital components and the firms' profitability. Another study conducted in the food sector was done by Usama (2012) He had done the study on Pakistani firms which used 18 listed firms from the KSE for the period of 2006 to 2010 as a sample of study to examine the effects of the working capital management on the firms' profitability and liquidity. ACP, APP, ICP, CCC, debt ratio, firms' size and financial assets to total assets ratio is used as the independent variables while net operating profitability used as the dependent variables. He found significant results from financial assets to total assets ratio, firm size and ACP by using OLS. Fixed effect model and random effect model had resulted that there was a significant relationship from both financial assets to total assets ratio and the firms' size. Firm size and financial assets to total assets ratio gave a positive relationship on the firms' profitability while ACP shows a negative relationship to the firms' profitability. The study done by Bieniasz and Golas (2011) showed more significant results compared to Usama (2012) in the food sector. This may be due to the large sample which was used by Bieniasz and Golas (2011).

Arunkumar and Ramanan (2013) conducted a study in India by using 1198 manufacturing firms as the sample of study for the period of 2005 to 2009. The study used eight independent variables which are APP, ACP, ICP,

CCC, CR, current liabilities to total assets ratio, financial assets to total assets ratio, size of firm and assets turnover ratio. Meanwhile, return on assets used as proxy of the firms' profitability as well as the dependent variable in the study. By using weighted least squares method, the study resulted that all the independent variables gives significant result to the firms' profitability except APP. The study continued by conducting sensitivity analysis to examine on the lower and the upper bound of ROA which showed that the manufacturing of the firms' well performance in 2009.

A study done by using small-medium enterprises (SMEs) as the sample of study was Garcia-Teruel and Martinez-Solano (2007). The study used 8,872 Spanish firms from year 1996 to 2002. Another study done in small-medium enterprises (SMEs) was Bellouma (2011) which shared the same findings with Garcia-Teruel and Martinez-Solano (2007) even though the previous study used return on asset instead of gross operating profit. Bellouma (2011) had examined relationship between the gross operating profitability and the working capital components which were ACP, APP, ICP and CCC. The study used 386 small and medium sized export companies in Tunisia from year 2001 to 2008 and found negative relationship between them which were the days of sales outstanding, days of inventory turnover, days of payables outstanding and cash conversion cycle. The different between those studies is the method used to estimate the relationship but the study still found significant results which indicated that SMEs are really concern on working capital management components as to create higher profitability of a firm.

Based on the results mentioned above, it appears that there are significant findings between the working capital management and the firms'

performance. However, contradicted results still exit when different sample, period of study, methodology and variables were used in the study. Therefore, a study on working capital can be extended to close the gap in finding the relationship between working capital and firms' performance.

CHAPTER 3

METHODOLOGY

3.0   Introduction

This chapter discusses the methodology used for the purpose of the actual study. Data were collected from Bursa Malaysia. The data consist of net receivable, account payable, total inventories, total debt, total equity, market value, total current assets, total current liabilities and total assets. This chapter is divided into seven sections which are research framework, variables used in the study, developing hypotheses, measurement of variables, data collection, sampling and technique of data analysis.

3.1   Research framework

Figure 3.1: Theoretical Framework: Relationship between working capital and firms' performance

Independent:

1) Working Capital Management
    - Average collection period
    - Average payable period
    - Inventory conversion period
    - Cash conversion cycle
    - Current asset to total assets ratio
    - Current liabilities to total assets ratio
2) Control variables
    - Sales growth
    - Leverage
    - GDP growth

Dependent:

Firms' Performance

1) ROA

2) ROE

3) Tobin's Q
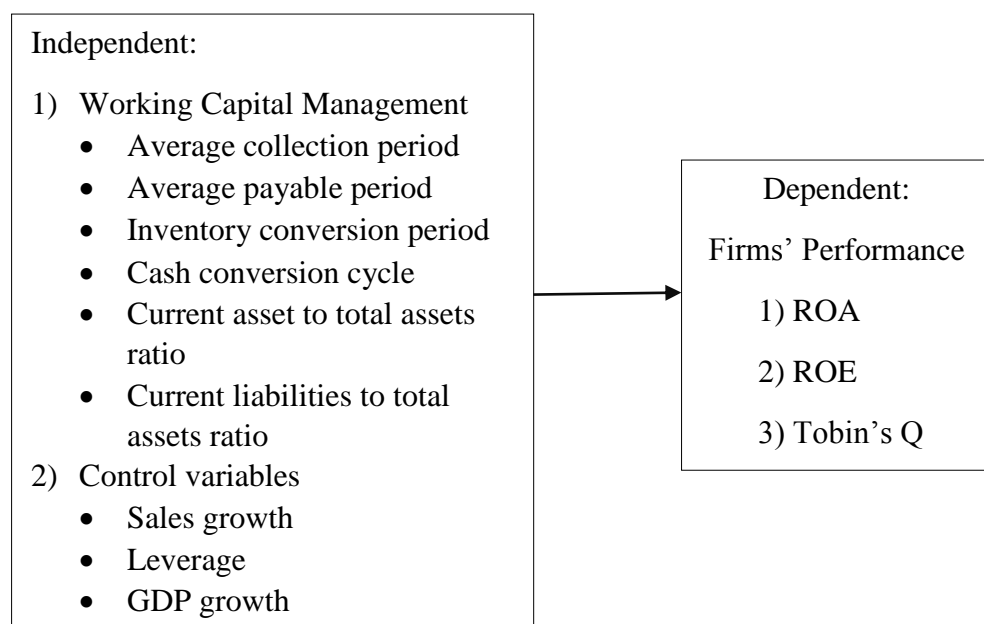
Figure 3.2: Theoretical Framework: Relationship between working
capital policies and firms' performance
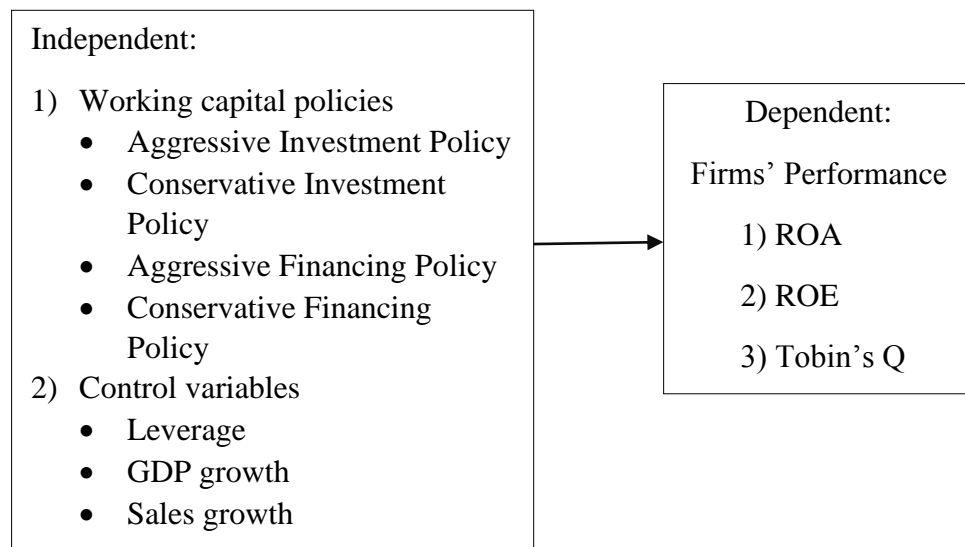
3.2 Variables

3.2.1 Dependent variables

This study uses return on equity and return on assets as a proxy for the firms' profitability and Tobin's Q is used to measure the firms' value. Return on assets and return on equity were used by Afza and Nazir (2008); Al-Shubiri (2011); Onwumere *et al*. (2012); Palani and Mohideen (2012); Bhutto *et al.* (2011). While, Tobin's Q is used by Afza and Nazir (2007, 2009), Mohamad and Saad (2010), Palani and Mohideen (2012), Pouraghajan and Emamgholipourarchi (2012) and Abuzayed (2012).

It was found to be mixed results with some proven insignificant relationship between the firms' value and the working capital management when using Tobin's Q as the dependent variable. Due to mixed findings, this study uses the ROA and ROE to measure the firms' profitability by using the

Malaysian firms as the sample of study as well as to capture the relationship between the firms' value and the working capital management by using Tobin's Q.

Return on assets measures net income of a firm is from the investment of total assets. As for the return on equity, it measures net income of a firm from the shareholders' investment. Higher ratio in ROA and ROE indicates that the firm is efficient in using its assets and equity invested in a firm to generate higher income.

Tobin's Q is a ratio that is used to measure whether the stock is undervalued or overvalued. Low ratio indicates that the stock is undervalued which means that the firms' asset is greater that the firms' value. Whereby, higher ratio indicates that the stock is overvalued in which the stock value is greater than the firms' asset.

3.2.2   Independent variables

This study uses working capital management and working capital policy components as the independent variables. The working capital management components are the average collection period, the average payable period, the inventory conversion period and the cash conversion cycle. Previous studies had shown that all these variables had given significant results (Gill *et al*., 2010; Mansoori and Muhammad, 2012; Garcia *et al*., 2011; Deloof, 2003; Mousavi and Jari, 2012 and Ukaegbu, 2014) and therefore this study used the same variables to examine the relationship between the working capital management and the firms' performance using the Malaysian listed firms. The working capital policy is examined by using aggressive investment

policy and aggressive financing policy (Afza and Nazir, 2008; Al-Shubiri, 2011, Onwumere *et al*., 2012; Palani and Mohideen, 2012; Bhutto *et al*., 2011).

A firm records its net accounts receivable in the balance sheet when the firm sells goods or services on credit. The firm may offer credit period to customers' in repaying their debt depending on the firm's policy whether to give lengthy period or shorter period. They might also offer a credit period based on customers' historical payment or relationship between the firms and the customers'. The purpose of a firm granting credit to customers is to maintain good relationship in order to increase sales.

Accounts payable is the short term liabilities which are recorded in the balance sheet of a firm. Trade credit is the best alternative of short term financing. Firms will usually buy its raw materials on credit and they will take more than a month to pay their suppliers but it depends on the industry and the relationship between the suppliers and the firms.

Inventory or stocks is usually held by the manufacturing firms. Inventory of a firm can be in the form of raw materials, work in progress or finished goods. A service industry will have no inventory as it is not a manufacturer. Inventory is a crucial part in a firm whereby holding too large inventory and too little inventory will affect the firms' working capital. Larger inventory in a firm may lead to the obsolescent of products, but smaller number of inventory in a firm may cause the firm to encounter a risk where they were out of stock.

Cash conversion cycle is the time taken by a firm to convert its resources into cash. Usually, a firm will purchase raw materials by credit, thus

recorded into the payable account, while selling the products to the customers'

in credit is recorded as the receivable of a firm. It measures the period between

cash out and cash recovery.

Current asset to total asset ratio and current liabilities to total asset ratio

are the ratios that is used to determine whether a firm is using aggressive,

moderate or conservative strategies in their working capital. Firms with

aggressive strategy have lower current asset and higher current liabilities in the

working capital. Therefore, lower current asset to total asset ratio and higher

current liabilities to total asset ratio is classified as an aggressive approach. On

contrary, the conservative strategy tends to have higher current asset to total

assets ratio and lower current liabilities to total asset ratio.

3.2.3   Control variables

Control variables are the variables that could influence the relationship

but not the area of interest to be studied by the researcher. Previous researchers

also incorporated control variables in their studies on the working capital

management (Ukaegbu (2014), Deloof (2003), Abuzayed (2012), Karaduman

et al. (2010) and Charitou *et al.* (2010) Afza and Nazir (2009), Garcia-Teruel

and Martinez-Solano (2007), Palani and Mohideen (2012)). Similar to previous

studies, this study used leverage, GDP growth and sales growth as the control

variables. These variables have been shown to be significant in explaining the

working capital management (Afza and Nazir (2009); Garcia-Teruel and

Martinez-Solano (2007); and Palani and Mohideen (2012)).

3.2.4 Dummy variable

Dummy variable is a variable that is used to classify the data into mutually exclusive categories. This study uses dummy variables for the crisis in first study on the relationship between the working capital and the firms' performance. The global financial crisis which happened in year 2008 and 2009 was given a value of 1 and year without crisis which in year 2010 to 2012 was given a value of 0.

In the second study which looked at the relationship between working capital policies and firms' performance, four different dummy variables were used. They are the dummy for the aggressive investment policy, the dummy for the conservative investment policy, the dummy for the aggressive financing policy and dummy for the conservative financing policy.

Previous studies that has categorized the working capital policies into three levels which are aggressive, moderate and conservative as to examine the relationship between each working capital policies and firms' performance are Bei and Wijewardana (2012) and Bolek (2013). Bei and Wijewardana (2012) used different cut-off point to differentiate the working capital policies. They only used current liabilities to total assets as proxy to WCP. They noted the sample as aggressive WCP if the CLTAR is more than 0.2, noted the sample as moderate WCP when the CLTAR range from 0.14 to 0.199 and noted the sample as conservative WCP when the value of CLTAR is less than 0.139.

In another study by Bolek (2013), the author also categorized the WCP into three levels which are aggressive, moderate and conservative. Contrary from Bei and Wijewardana (2012), this study used CATAR and CLTAR to

examine the relationship between working capital policies and firms' performance. However, this study does not used cut-off point and only differentiate the WCP between high and low ratio in current liabilities to total liabilities ratio and current asset to total asset ratio. The sample were noted as aggressive policy if the sample have high CLTLR and low CATAR. While, the moderate policy is classified into two which the first sample have high CATAR and high CLTLR, and the second sample which have low CATAR and low CLTLR. Lastly, the sample were noted as conservative policy if the sample have high CATAR and low CLTLR.

This study used two proxy of WCP which are investment and financing policy. The sample is noted as aggressive investment policy when the firms' CATAR is range from 0 to 39%. While, the sample is noted as conservative investment policy when the firms' CATAR is range from 60% and above. Another proxy to WCP is financing policy. The sample is noted as aggressive financing policy when the firms' CLTAR is range from 60% and above. While, the sample is noted as conservative financing policy when the firms' CLTAR is range from 0 to 29%. These dummy variables are summarized in table 3.1.

Table 3.1 Dummy variables used in the relationship between the working capital policies and the firms' performance.

Dummy	Explanation
Aggressive investment policy	Noted as 1 when the firms' CATAR between 0-39% and noted 0 if not.
Conservative investment policy	Noted as 1 when the firms' CATAR between 60% and above, noted 0 if not.
Aggressive financing policy	Noted as 1 when the firms' CLTAR between 60 and above, noted 0 if not.
Conservative financing policy	Noted as 1 when the firms' CLTAR between 0-29% and noted 0 if not.

This study does not used the same range from previous study by Bei and Wijewardana (2012) and Bolek (2013) because each sector possess different range of CATAR and CLTAR. The construction sector holds CATAR from 41.89% to 89.23%, the consumer products sector 6.23% to 92.66%, the industrial products sector 5.11% to 89.22%, the plantation sector 9.70% to 47.64%, the properties sector 8.33% to 86.16% and the trading and services sector 16.68% to 89.89%. The lowest CATAR is 5.11% and the highest CATAR is 92.66%. To reduce bias in which some sector have high CATAR and some sector have low CATAR, therefore in this study the range of CATAR ratio is divided into three levels which are 0 to 39%, 40% to 59% and 60% and above. The range between 0 to 39% is for aggressive investment policy, 40% to 59% is for moderate investment policy and 60% and above is for conservative investment policy.

However, the cut-off point for financing policy was different from the investment policy because each sector possess different range in CLTAR. The construction sector holds CLTAR from 8.94% to 83.25%, the consumer products sector 5.66% to 73.06%, the industrial products sector 4.28% to 78.17%, the plantation sector 0.04% to 35.39%, the properties sector 3.93% to 33.28% and the trading and services sector 9.59% to 65.69%. The lowest CLTAR is 0.04% and the highest CLTAR is 83.25%. To reduce bias in which some sector have high CLTAR and some sector have low CLTAR, therefore, the range is divided into three levels which are 0 to 29% for conservative financing policy, 30% to 59% for moderate financing policy and 60% and above for aggressive financing policy. Below are the WCP and total observations from six sectors:

Table 3.2 Investment Policies among six sectors

	AIP	MIP	CIP	Total observations
Construction	0	5	25	30
Consumer products	43	29	38	110
Industrial products	44	83	63	190
Plantations	28	7	0	35
Properties	12	9	24	45
Trading and services	48	41	26	115
Total	175	174	176	525

Table 3.3 Financing Policies among six sectors

	AFP	MFP	CFP	Total observations
Construction	19	6	5	30
Consumer products	41	36	33	110
Industrial products	76	66	48	190
Plantations	2	5	28	35
Properties	0	15	30	45
Trading and services	37	47	31	115
Total	175	175	175	525

3.3 Hypotheses

The study on relationship between the working capital and the firms' performance derives six hypotheses which are:

3.3.1 Average collection period and firm performance

The longer period taken in the collection of debt will give the customers more accessibility to the quality of the products. Previous researchers that had found positive relationship between ACP and firms' performance are Nzioki *et al.* (2013), Abuzayed (2012), Sharma and Kumar (2011), Azam and Haider (2011), Chhapra and Naqvi (2012) and Panigrahi (2013). However, the longer period of time given to the customers will incur higher risk to the firm since it could not get cash immediately for company to expand and use the fund for

operating activities. Therefore, the shorter receivable collection period will give more profit to the firm. Previous researchers that had found negative relationship between ACP and the firms' performance are Gill *et al.* (2010), Mansoori and Muhammad (2012), Garcia *et al.* (2011), Deloof (2003), Vahid *et al*. (2012), Ukaegbu (2014), Akinlo (2012), Sabri (2012), Karaduman *et al*. (2010), Korankye and Adarquah (2013), Charitou *et al*. (2010), Napompech (2012), Mumtaz *et al.* (2013), Vishani and Shah (2007), Usama (2012), Bieniasz and Golas (2011) and Bellouma (2011). Therefore, this study hypothesized that:

H1: There is a relationship between the average collection period and the firms' performance.

3.3.2   Average payable period and firm performance

Average payable period is the time taken by the firms in paying their debt. Firms will make late payment to the suppliers because the firm will use the cash primarily for its expansion. Among the previous studies that had found positive relationship between APP and the firms performance are Ukaegbu (2014), Nzioki *et al*. (2013), Azam and Haider (2011), Chhapra and Naqvi (2012), Panigrahi (2013) and Vishani and Shah (2007). However, if the firms took long period of time in paying the debt, the firm would loss its opportunity by having the discounted rate for early payment. This would probably makes the company pays too much cost for the resources. Some of researchers that had found negative relationship between APP and the firms' performance are Mansoori and Muhammad (2012), Garcia et al (2011), Deloof (2003), Vahid

et al. (2012), Akinlo (2012), Abuzayed (2012), Sabri (2012), Karaduman *et al*. (2010), Sharma and Kumar (2011), Korankye and Adarquah (2013), Charitou *et al*. (2010), Napompech (2012), Mumtaz *et al*. (2013), Bieniasz and Golas (2011) and Bellouma (2011). Therefore, this study hypothesized that:

H2: There is a relationship between the average payable period and the firms' performance.

3.3.3   Inventory conversion period and firm performance

Inventory conversion period is the time taken to convert the inventory into sales. The longer period it takes to convert the inventory to sales can avoid the shortage of cost. Previous researchers that had found positive relationship between ICP and the firms' performance are Abuzayed (2012), Azam and Haider (2011), Nimalathasan (2010), Chhapra and Naqvi (2012) and Panigrahi (2013). However, the shorter period of time would be better because the firms do not have to pay additional cost of storage. Previous research found negative ICP and the firms' performance are Mansoori and Muhammad (2012), Garcia *et al*. (2011), Deloof (2003), Vahid *et al*. (2012), Ukaegbu (2014), Akinlo (2012), Sabri (2012), Karaduman *et al*. (2010), Sharma and Kumar (2011), Korankye and Adarquah (2013), Charitou *et al*. (2010), Napompech (2012), Mumtaz *et al*. (2013), Vishani and Shah (2007), Bieniasz and Golas (2011) and Bellouma (2011). Therefore, this study hypothesized that:

H3:   There is a relationship between the inventory conversion period and the firms' performance.

3.3.4 Cash conversion cycle and firms performance

Cash conversion cycle is the time taken by a company to convert its resources into cash through sales. The shorter time taken to convert its products into cash is more profitable to the firms. Previous studies that had found negative relationship between CCC and the firms' performance are Mansoori and Muhammad (2012), Garcia *et al.* (2011), Deloof (2003), Ukaegbu (2014), Nzioki *et al.* (2013), Mohamad and Saad (2010), Sabri (2012), Karaduman *et al.* (2010), Nimalathasan (2010), Charitou *et al.* (2010), Napompech (2012), Mumtaz *et al.* (2013), Bieniasz and Golas (2013) and Bellouma (2011). However, there are some researches who has found positive relationship between CCC and the firms' performance (Gill *et al.*, 2010; Garcia *et al.*, 2011; Abuzayed, 2012; Sharma and Kumar, 2011; Azam and Haider, 2011; Chhapra and Naqvi, 2012; and Panigrahi, 2013). Therefore, this study hypothesized that:

H4: There is a relationship between the cash conversion cycle and the firms'
    performance.

3.3.5 Investment policy in working capital and firm performance

Aggressive investment policy stressed on the minimum investment in current assets compared to the fixed assets while conservative policy stressed on the higher investment in current assets compared to the fixed assets. Among the previous studies that had found positive relationship between aggressive investment policy and the firms' performance is Onwumere *et al.* (2012), while, negative relationship between aggressive investment and the firms' performance was found by Afza and Nazir (2007, 2008, 2009), Al-Shubiri

(2011), Palani and Mohideen (2012) and Chaklader and Shrivastava (2013). For this analysis, the hypotheses are:

H5a: There is a relationship between the aggressive investment policy and the firms' performance.

H5b: There is a relationship between the conservative investment policy and the firms' performance.

3.3.6   Financing policy in working capital and firm performance

Aggressive financing policy refers to a higher proportion in current liabilities compared to the long term debt while the conservative financing policy is focusing more on long term debt compared to the current liabilities. Previous studies which had found positive relationship between the aggressive financing policy and the firms' performance is Onwumere *et al.* (2011). Meanwhile, negative relationship was found by Afza and Nazir (2007, 2008, 2009), Al-Shubiri (2011), Palani and Mohideen (2012) and Chaklader and Shrivastava (2013). For this analysis, the hypotheses are:

H6a: There is a relationship between the aggressive financing policy and the firms' performance.

H6b: There is a relationship between the conservative financing policy and the firms' performance.

3.4 Measurement of variables

This study uses twelve variables to estimate the relationship between the working capital and the firm performance. All the variables have been found to be significant by the previous authors. The variables are ACP, APP, ICP and CCC which are the working capital components. Meanwhile, working capital policies as measured by AIP and AFP are used by Salawu (2006); Afza and Nazir (2008); Al-Shubiri (2011); and Palani and Mohideen (2012).

Table 3.4 Variables used in the study

	Variables	Formula
Dependent Variables	ROA	Net Income/Total Assets
	ROE	Net Income/Total Equity
	Tobin's Q	Market value of firm/Book value of assets
Independent Variables	ACP	Net receivables/(Sales/365)
	APP	Accounts payable/(Cost of goods sold/365)
	ICP	Total Inventories/(Cost of goods sold/365)
	CCC	ACP+ICP-APP
	AIP	Total current assets/Total assets
	AFP	Total current liabilities/Total assets
Control Variables	Leverage	Total debts/Total assets
	GDP growth	Real annual GDP growth rate of Malaysia
	Sales growth	(Sales $_{y1}$ – Sales $_{y0}$)/Sales $_{y0}$

3.5 Data collection

This study uses the Malaysian firms listed in Bursa Malaysia. Six sectors are selected which are construction, consumer products, industrial products, plantations, properties, and trading and services. Financial sector is not included in the sample because of its different accounting treatment. Most previous researchers had eliminated the financial sector from their sample of study. This study also excludes the technology, mining and hotel sectors due to the small sample size. Firms are also excluded if they have been eliminated

from Bursa Malaysia, merged with other firms or have negative equity. Furthermore, firms with missing data and newly listed are also excluded from the sample (Palani and Mohideen, 2012). All data are collected from Thomson Reuters Datastream, and the period is between year 2008 to 2012.

3.6   Sampling

This study uses stratified random sampling which involved two steps of processes. In the first step, the population is segregated into six stratums which are construction, consumer products, industrial products, plantations, properties and trading and services. Only 20% of the sample from each population was selected. The second step involved systematic sampling procedure whereby every 5th element in each stratum is selected as the sample of the study. From this process, there are 105 firms selected from six sectors in Bursa Malaysia with 525 total observations. The final samples as follows.

Table 3.5 Sample of firms

Industry	Number of firms
Construction	6
Consumer products	22
Industrial products	38
Plantations	7
Properties	9
Trading/Services	23
Total firms	105

3.7   Techniques of data analysis

Multiple regressions were used to estimate the relationship between the independent and the dependent variables. Specifically, the study on the relationship between working capital and working capital policies is executed

by using the ordinary least squares (OLS) regression and fixed effect model. The study on fixed effect model has been derived previously by Ukaegbu (2014) in his study to encounter the cross-sectional effects. The multiple regression model and fixed effect models were carried out by using Gretl. The correlation analysis and the descriptive statistics were carried out by using SPSS 16.0.

3.7.1 Models

Five models were estimated. Four models are used to analyse the relationship between the working capital components and the firms' performance as previously used by Mansoori and Muhammad (2012), Ukaegbu (2014), Abuzayed (2011) and Garcia *et al.* (2011).The other model is used to determine the relationship between the working capital policies and the firms' performance.

3.7.1.1 Relationship between working capital management and firms' performance

Four models were used to derive the relationship between the working capital management and the firms' performance by controlling the sales growth, leverage and annual GDP growth rate and adding dummy for crisis in year 2008 and 2009.

Model 1

The first model will derive the relationship between the average receivable collection and the firms' performance.

$$\text{ROA}_i = \acute{\alpha} + \beta_1\textbf{ACP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 1)}$$

$$\text{ROE}_i = \acute{\alpha} + \beta_1\textbf{ACP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 2)}$$

$$\text{TQ}_i = \acute{\alpha} + \beta_1\textbf{ACP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 3)}$$

Model 2

The second model will derive the relationship between the average payment period and the firms' performance.

$$\text{ROA}_i = \acute{\alpha} + \beta_1\textbf{APP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 4)}$$

$$\text{ROE}_i = \acute{\alpha} + \beta_1\textbf{APP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 5)}$$

$$\text{TQ}_i = \acute{\alpha} + \beta_1\textbf{APP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 6)}$$

Model 3

The third model will derive the relationship between the inventory conversion period and the firms' performance.

$$\text{ROA}_i = \acute{\alpha} + \beta_1\textbf{ICP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 7)}$$

$$\text{ROE}_i = \acute{\alpha} + \beta_1\textbf{ICP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 8)}$$

$$\text{TQ}_i = \acute{\alpha} + \beta_1\textbf{ICP}_i + \beta_2\, \text{CATAR}_i + \beta_3\, \text{CLTAR}_i + \beta_4\, \text{SG}_i + \beta_5\, \text{LEV}_i + \beta_6\, \text{GDP}_i$$
$$+ \beta_7\, \text{D}_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 9)}$$

Model 4

The fourth model will derive the relationship between the cash conversion cycle and the firms' performance.

$$ROA_i = \acute{\alpha} + \beta_1 \mathbf{CCC}_i + \beta_2\, CATAR_i + \beta_3\, CLTAR_i + \beta_4 SG_i + \beta_5\, LEV_i + \beta_6 GDP_i$$
$$+ \beta_7\, D_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 10)}$$

$$ROE_i = \acute{\alpha} + \beta_1 \mathbf{CCC}_i + \beta_2\, CATAR_i + \beta_3\, CLTAR_i + \beta_4\, SG_i + \beta_5\, LEV_i + \beta_6 GDP_i$$
$$+ \beta_7\, D_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 11)}$$

$$TQ_i = \acute{\alpha} + \beta_1 \mathbf{CCC}_i + \beta_2\, CATAR_i + \beta_3\, CLTAR_i + \beta_4\, SG_i + \beta_5\, LEV_i + \beta_6\, GDP_i$$
$$+ \beta_7\, D_{crisis} + \varepsilon \qquad\qquad \textbf{............... (Eq. 12)}$$

Where,

ROA	= Return on Assets
ROE	= Return on Equity
TQ	= Value of q
ACP	= Average collection period
APP	= Average payment period
ICP	= Inventory conversion period
CCC	= Cash conversion cycle
CATAR	= Current asset to total assets ratio
CLTAR	= Current liabilities to total assets ratio
SG	= Sales growth
LEV	= Leverage
GDP	= Annual GDP growth rate
Dcrisis	= Dummy for crisis in year 2008 and 2009
$\acute{\alpha}$	= intercept
ε	= error term

3.7.1.2 Relationship between working capital policies and firms' performance

The fifth model is used to describe the relationship between the working capital policies and the firms' performance. This model will clarify the relationship between the aggressive and the conservative policy with the firms' performance measured by ROA, ROE and Tobin's Q. This model also used control variables which are sales growth, leverage and annual GDP growth rate.

$$ROA_i = \acute{\alpha} + \beta_1 Daip_i + \beta_2 Dcip_i + \beta_3 Dafp_i + \beta_4 Dcfp_i + \beta_5 SG_i + \beta_6 LEV_i + \beta_7 GDP_i + \varepsilon \qquad \textbf{............... (Eq. 13)}$$

$$ROE_i = \acute{\alpha} + \beta_1 Daip_i + \beta_2 Dcip_i + \beta_3 Dafp_i + \beta_4 Dcfp_i + \beta_5 SG_i + \beta_6 LEV_i + \beta_7 GDP_i + \varepsilon \qquad \textbf{............... (Eq. 14)}$$

$$TQ_i = \acute{\alpha} + \beta_1 Daip_i + \beta_2 Dcip_i + \beta_3 Dafp_i + \beta_4 Dcfp_i + \beta_5 SG_i + \beta_6 LEV_i + \beta_7 GDP_i + \varepsilon \qquad \textbf{............... (Eq. 15)}$$

Where,

ROA	= Return on Assets
ROE	= Return on Equity
TQ	= Value of q
Daip	= Dummy for aggressive investment policy
Dcip	= Dummy for conservative investment policy
Dafp	= Dummy for aggressive financing policy
Dcfp	= Dummy for conservative financing policy
SG	= Sales growth
LEV	= Leverage
GDP	= Annual GDP growth rate
$\acute{\alpha}$	= intercept
ε	= error term

CHAPTER 4

FINDINGS

4.0 Introduction

This chapter discusses the descriptive statistics, correlation analysis and regression analysis. Descriptive statistics and regression analysis are conducted on each sectors which are construction, consumer products, industrial products, plantations, properties and trading and services.

4.1 Descriptive statistics

Table 4.1, 4.2, 4.3, 4.4, 4.5 and 4.6 show the descriptive statistics by each sectors. The descriptive statistics show the minimum, maximum, median, mean and standard deviation of the six sectors.

4.1.1 Construction

The descriptive statistics of the construction sector is shown in Table 4.1. ROE in the construction sector is between -26.81% and 24.89%. Whereas, ROA in the construction sector is between -14.75% and 12.42% which is much lower than the ROE. This indicates that the construction sector has utilised its shareholders' equity in creating profit to the firm. Tobin's Q in the construction sector is ranged from 9.8% to 80.07%. The maximum days of ACP are 437.9 days and the minimum days of ACP are 123.6. The maximum days of APP are 196.24 days and the minimum days of APP are 35.52. ICP in the

construction sector is between 0 and 111.57 days. CCC in the construction sector is between 51.81 and 312.77 days. CATAR is ranged between 41.89% and 89.23%, while CLTAR is ranged between 8.94% and 83.25%. The maximum leverage in the construction sector is 43.59% and the minimum is 0% which is quite low and this shows that this sector depend mostly on the shareholders' equity in their operation activities.

4.1.2 Consumer products

The descriptive statistics of consumer products sector were shown in Table 4.2. This industry shows the highest ROE and ROA. The maximum ROA is 528.05% and 567.16% for ROE. Moreover, the consumer products sector has shown higher Tobin's Q with the maximum Tobin's Q is 678.73%. The period taken to collect their debt from the customers is between 21.72 days to 149.26 days. This sector pays their suppliers between 0.6 days to 152.15 days which indicates some of the company in the sector will take shorter period to pay their creditors. However, this sector takes longer period to convert their inventory with maximum days was 328.41 days. Therefore, this sector has higher CCC with 370.76 days. CATAR is ranged between 6.23% and 92.66%. Meanwhile, CLTAR is ranged from 5.66% to 73.06%. The maximum leverage in the consumer products sector is 62.94% and the minimum is 0% which indicates that some companies preferred leverage financing and some preferred equity financing.

4.1.3 Industrial products

The descriptive statistics of consumer products sector are shown in Table 4.3. ROE in industrial sector is between -79.45% and 43.01%, ROA is range between -26.25% and 24.75%. Tobin's Q is ranged between 1.62% and 312.11%. This sector takes longer period to collect their debt with the maximum days of 583.25 and minimum days of 9.55 days. The industrial products sector also has longer period in payable and the inventory conversion period with maximum days of payable is 2623.948 and maximum days of conversion inventory are 589.33. CCC is ranged from -2139.33 days to 818.41 days. CATAR is ranged from 5.11% to 89.22% while CLTAR is ranged between 4.28% and 78.17%. Leverage in this sector is quite high with the maximum leverage is 75.68% and some firm in this sector prefers equity financing which shows that the minimum level of leverage is 0%.

4.1.4 Plantations

The descriptive statistics for the consumer products sector are shown in Table 4.4. The maximum value of ROE is 29.58%, ROA is 12.97% and Tobin's Q is 265.77%. While, the minimum value of ROE, ROA and Tobin's Q are -5.22%, -4.40% and 20.90% respectively. The plantation has maximum days in the inventory with 6880 days. Therefore, this sector has longer CCC with the maximum days of 6871.79. Maximum days in collecting debt is less than a year with the ACP is 314.4 days, while paying the creditors takes longer period with maximum days of 369.13 days. CATAR and CLTAR for this sector are

less than 50% with the maximum value of CATAR is 47.64% and CLTAR is 35.39%. Leverage in this sector is between 0% and 56.98%.

4.1.5 Properties

The descriptive statistics of the consumer products sector are shown in Table 4.5. The property sector has lower ROE and ROA compared to other sectors with the maximum value of ROE and ROA are 15.79% and 12.92% respectively. However, the range between the maximum and minimum value of ROE and ROA are quite close compared to other sectors. The minimum value of ROE and ROA are -5.49% and -4.97% respectively. The range of Tobin's Q is between 15.25% and 80.06%. The properties sector has longer period in ACP, APP, ICP and CCC. The CATAR is ranged between 8.33% and 86.16% while CLTAR is ranged between 3.93% and 33.28%. The properties sector used the equity financing more than the debt financing as the maximum leverage financing is only 33.97% and the minimum value of leverage financing in this industry is 0.05%.

4.1.6 Trading and services

The descriptive statistics of the consumer products sector are shown in Table 4.6. The maximum value of ROE is 105.44% and the minimum value of ROE is -114.97%. The industry has low ROA compared to their ROE with maximum value of 37.28% and the minimum value is -64.54%. Tobin's Q is ranged between 6.46% and 673.32%. The least time taken in collecting the debt from the customers for this industry is 4.04 days while the longer period taken is 629.10

days. This industry has shorter period in paying their suppliers compared to collecting their debts. The least time taken is 2.78 days while the longer time taken to pays their debt is 494.20 days. However, the ICP in this industry is quite high with maximum days of 1542.69 days. Therefore, it has higher CCC with the maximum days of 2008.18 days. The CATAR is ranged between 16.68% and 89.89%. The CLTAR is ranged between 9.59% and 65.69%. The maximum leverage in this sector is 58.53% while the minimum of leverage is 0.059%.

4.1.7 Overall sectors

On average, the highest ROE and ROA is found in the consumer products sector with ROE is 11.62% and ROA is 8.82%. The longer ACP by average is the construction sector which shows 216.54 days to collect their debt. The longer average days to pay the suppliers are shown by the properties sector with 147.52 days. In average, the properties sector has longer ICP and CCC with 1262.59 days and 1299.28 days respectively. The shorter period in ACP by the average is 66.05 days in the plantation sector. The shorter period of APP by average is the consumer products with average 44.42 days. The construction sector has shorter ICP compared to other sectors with average 28.89 days. The industrial sectors have shorter period in CCC with average 115.05 days. The higher CATAR and CLTAR by average are the construction industry by holding the average 72.16% and 46.84% respectively. These indicate that the construction industry does only employed the aggressive financing policy by holding higher current liabilities to total assets and employed the conservative

investment policy by holding larger current assets to total assets. The lower CATAR and CLTAR are the plantations sector with 29.94% and 11.76% on average respectively. These indicate that the plantations sectors have employed the aggressive investment policy by holding lower current assets to total assets and employed the conservative financing policy by holding lower current liabilities to total assets. The higher sales growth is the properties sector with the average of 29.86%. The sector that has higher leverage is the consumer products with the average of 24.76% while the lower leverage hold by the properties sector with 13.43% on average.

By using median to compare previous literature by Banos-Caballero *et al*. (2009) which has done a study in a non-listed Spanish firms founds that the construction industry has average collecting debt of 176.05 days, inventory with 37.42 days, payable with 146.72 days, CA/TA with 72.7% and CL/TA with 59.5%. Compared to this study, the construction sector in Malaysia relatively has longer period in ACP and APP. On the other hand, the ICP has shorter period, CA/TA and CL/TA have lower ratio compared to the Spanish firms. Comparatively, the Spanish service sector has shorter ACP, APP and ICP with 106.72 days, 51.34 days and 50.44 days respectively. However, the study found that the Spanish service sector relatively has higher CA/TA and CL/TA ratio with 47.5% and 36.6%, respectively.

The standard deviation measures the dispersion of the data from its mean. Comparatively, the properties sector has the highest standard deviation in ACP, APP, ICP, CCC and CATAR compared to the other

sectors. Meanwhile, the standard deviation of CLTAR is the highest in construction sector, the standard deviation of ROA and ROE is the highest in consumer products sector and the standard deviation of Tobin's Q is the highest in trading and services sector. However, the consumer products sector has the lowest standard of deviation in ACP and APP. The construction sector has the lowest standard deviation of ICP and CCC. The lowest standard deviation of CATAR is in the plantation sector and the properties sector which have the lowest standard of deviation in CLTAR, ROA, ROE and Tobin's Q.

Table 4.1: Descriptive statistics for the construction sector

Variables	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-0.2681	0.248856	0.042414	0.053084	0.104624
ROA	-0.14752	0.124164	0.021459	0.012924	0.057827
Tobin's Q	0.098044	0.800696	0.330927	0.29142	0.201978
ACP	123.6014	437.9185	216.5407	194.1537	65.06295
APP	35.52459	196.2429	102.2584	96.72131	39.32133
ICP	0	111.574	28.88526	30.47621	25.75513
CCC	51.81248	312.7733	143.1675	131.8415	56.58098
CATAR	0.418868	0.892335	0.721577	0.735016	0.118575
CLTAR	0.089409	0.832529	0.46837	0.390227	0.236212
SG	-0.57987	1.603394	0.073075	0.069231	0.405216
Leverage	0	0.435945	0.156497	0.149074	0.153715
GDP	-0.01514	0.074248	0.043022	0.051279	0.03096

Table 4.2: Descriptive statistics for the consumer products sector

	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-0.86091	5.671621	0.116204	0.070587	0.566012
ROA	-0.63353	5.280529	0.088228	0.034923	0.509836
Tobin's Q	0.068394	6.787299	0.690057	0.399455	0.939082
ACP	21.72277	149.2574	72.0562	66.57007	33.05023
APP	0.601832	152.1492	44.41623	35.68611	28.66617
ICP	9.885032	328.4093	101.7392	79.85656	72.22582
CCC	-52.57	370.7508	129.3792	119.0991	86.89141
CATAR	0.062333	0.926579	0.472123	0.433688	0.197972
CLTAR	0.056633	0.730605	0.319814	0.277757	0.168548
SG	-0.92967	0.805116	0.061	0.069882	0.235768
LEVERAGE	0	0.629441	0.247547	0.252699	0.16615
GDP	-0.01514	0.074248	0.043022	0.051279	0.030579

Table 4.3: Descriptive statistics for the industrial products sector

	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-0.79452	0.430062	0.023202	0.051673	0.182072
ROA	-0.26251	0.247495	0.029646	0.033982	0.078406
Tobin's Q	0.016217	3.121059	0.487499	0.324677	0.453201
ACP	9.548465	583.2488	91.09146	81.04285	62.1478
APP	0.587056	2623.948	81.11099	43.21211	244.6837
ICP	1.471181	589.331	105.0678	77.9969	93.92937
CCC	-2139.33	818.4057	115.0483	107.0373	259.2493
CATAR	0.051079	0.892158	0.493001	0.49897	0.178248
CLTAR	0.042777	0.781708	0.319044	0.309273	0.166016
SG	-0.80471	1.986451	0.06726	0.056157	0.29526
LEVERAGE	0	0.756806	0.224263	0.228335	0.164994
GDP	-0.01514	0.074248	0.043022	0.051279	0.03052

Table 4.4: Descriptive statistics for the plantations sector

	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-0.05216	0.29576	0.086954	0.087068	0.076679
ROA	-0.04399	0.129704	0.045779	0.043717	0.039611
Tobin's Q	0.208973	2.657744	0.715006	0.489182	0.554842
ACP	6.602906	314.4018	66.05082	42.44863	63.60698
APP	7.742062	369.1259	81.97739	36.36807	101.3149
ICP	1.541492	6880.009	814.3536	77.70513	1953.47
CCC	-92.7334	6871.794	798.427	92.50296	1915.392
CATAR	0.097029	0.476352	0.299351	0.317747	0.097737
CLTAR	0.004026	0.353904	0.117575	0.096794	0.10123
SG	-0.87122	0.900301	0.063637	-0.03182	0.365467
LEVERAGE	0	0.56984	0.178074	0.131185	0.180889
GDP	-0.01514	0.074248	0.043022	0.051279	0.030884

Table 4.5: Descriptive statistics for the properties sector

	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-0.05489	0.157901	0.058015	0.056807	0.049682
ROA	-0.04969	0.129196	0.038021	0.036672	0.03528
Tobin's Q	0.152495	0.800595	0.38441	0.317503	0.176137
ACP	12.14811	1176.516	184.2131	135.0601	217.8192
APP	14.51045	1521.142	147.5242	82.90692	254.9091
ICP	30.56735	17885.37	1262.588	301.212	3142.107
CCC	126.5508	17540.74	1299.277	363.8113	3106.457
CATAR	0.083304	0.86162	0.521302	0.593328	0.209761
CLTAR	0.039303	0.332809	0.174042	0.169441	0.083359
SG	-0.94727	7.055904	0.298589	0.069966	1.210538
LEVERAGE	0.000528	0.339671	0.134252	0.14553	0.107165
GDP	-0.01514	0.074248	0.043022	0.051279	0.030783

Table 4.6: Descriptive statistics for the trading and services sector

	Minimum	Maximum	Mean	Median	Standard deviation
ROE	-1.14971	1.054395	0.068844	0.075748	0.279094
ROA	-0.64543	0.37282	0.032801	0.04117	0.117686
Tobin's Q	0.064555	6.733165	0.827441	0.40395	1.153567
ACP	4.039538	629.1048	126.349	92.20828	120.6012
APP	2.778285	494.2028	66.18501	50.06789	66.73404
ICP	0	1542.685	138.9598	24.31264	343.4827
CCC	-130.714	2008.181	199.1238	83.70383	424.5114
CATAR	0.166798	0.898865	0.44969	0.444285	0.169422
CLTAR	0.09591	0.656869	0.299377	0.267055	0.135153
SG	-0.67338	5.425488	0.133357	0.087895	0.589475
LEVERAGE	0.000591	0.585301	0.251747	0.236812	0.139977
GDP	-0.01514	0.074248	0.043022	0.051279	0.030572

4.2   Correlation analysis

Table 4.7 shows the correlation matrix among the variables within the sample period from year 2008 to 2012. The correlation analysis has showed some variables give significant results and some not. CATAR is positively correlates to the ROA and ROE. On contrary, the CLTAR and leverage were found negatively correlated to the ROA and ROE. Four variables show negative correlation with Tobin's Q (ACP, APP, CLTAR and leverage). ACP has positive correlation with APP, ICP, CCC and CATAR. APP is positively correlated to ICP and CCC while negatively correlated to CATAR. ICP has positive correlation with CCC and negative correlation with CLTAR. CCC and CLTAR are negatively correlated. CATAR and CLTAR are positively correlated while CATAR and the leverage are negatively correlated. CLTAR and leverage are positively correlated and sales growth is positively correlated with GDP.

The correlation analysis is also conducted to test for the multicollinearity problem. Multicollinearity problem exists when the correlations value is more than 0.80 (Mohamad and Saad, 2010). Table 4.7 shows that CCC and ICP are highly correlated. To avoid multicollinearity problem in the regression, the working capital components (ACP, APP, ICP and CCC) are regressed independently. The second method to test multicollinearity is by using the VIF. If the variable shows VIF value is more than 10, the variable must be omitted. VIF results are shown in Table 4.8, 4.9, 4.10, 4.11, 4.12 and 4.13. From the results, it shows that only ICP in plantation sector has VIF value of 13.360 which is more than 10.   Therefore, it is suggested to regressed working capital components independently.

Correlation Matrix

Table 4.7: Correlation matrix

	ROA	ROE	TQ	ACP	APP	ICP	CCC	CATAR	CLTAR	SG	LEV	GDP
ROA	1	.932**	.234**	-.036	-.026	-.023	-.022	.173**	-.134**	-.045	-.125**	.034
ROE	.932**	1	.349**	-.040	-.021	-.025	-.025	.190**	-.148**	.000	-.127**	.036
TQ	.234**	.349**	1	-.190**	-.090*	-.047	-.051	.081	-.170**	.012	-.207**	.047
ACP	-.036	-.040	-.190**	1	.316**	.548**	.593**	.221**	.014	-.035	-.017	-.044
APP	-.026	-.021	-.090*	.316**	1	.399**	.274**	-.104*	-.024	.078	-.079	-.058
ICP	-.023	-.025	-.047	.548**	.399**	1	.988**	.046	-.151**	.019	-.060	-.047
CCC	-.022	-.025	-.051	.593**	.274**	.988**	1	.082	-.145**	.004	-.049	-.042
CATAR	.173**	.190**	.081	.221**	-.104*	.046	.082	1	.216**	.062	-.267**	.012
CLTAR	-.134**	-.148**	-.170**	.014	-.024	-.151**	-.145**	.216**	1	.035	.558**	.008
SG	-.045	.000	.012	-.035	.078	.019	.004	.062	.035	1	.015	.133**
LEV	-.125**	-.127**	-.207**	-.017	-.079	-.060	-.049	-.267**	.558**	.015	1	-.022
GDP	.034	.036	.047	-.044	-.058	-.047	-.042	.012	.008	.133**	-.022	1

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Multicollinearity Test: Variance Inflation Factors (VIF)

Table 4.8 Multicollinearity test by using VIF in the construction sector

ACP	1.888
APP	3.020
ICP	2.384
AIP	2.182
AFP	5.959
SG	1.604
LEV	4.550
GDP	2.246
Dcrisis	2.571

Table 4.9 Multicollinearity test by using VIF in the consumer products sector

ACP	1.142
APP	1.535
ICP	1.563
AIP	1.781
AFP	5.122
SG	1.193
LEV	3.736
GDP	2.177
Dcrisis	2.101

Table 4.10 Multicollinearity test by using VIF in the industrial products sector

ACP	1.099
APP	1.276
ICP	1.276
AIP	1.668
AFP	2.909
SG	1.177
LEV	3.450
GDP	2.169
Dcrisis	2.077

Table 4.11 Multicollinearity test by using VIF in the plantations sector

ACP	4.209
APP	8.967
ICP	13.360
AIP	1.811
AFP	2.309
SG	2.627
LEV	3.122
GDP	3.442
Dcrisis	3.568

Table 4.12 Multicollinearity test by using VIF in the properties sector

ACP	4.350
APP	8.426
ICP	7.379
AIP	3.134
AFP	2.116
SG	2.462
LEV	2.297
GDP	2.155
Dcrisis	2.401

Table 4.13 Multicollinearity test by using VIF in the trading and services sector

ACP	2.145
APP	1.306
ICP	1.951
AIP	2.127
AFP	1.802
SG	1.052
LEV	1.562
GDP	2.032
Dcrisis	2.061

4.3   Regression analysis

The regression analysis is carried out to estimate the relationship between the dependent variable and the independent variable. Two regression analyses are conducted in this study. Firstly, the regression analysis to estimate the relationship between the working capital management and the firms' performance. Secondly, the regression analysis to estimate the relationship between the working capital policies and the firms' performance. The first regression results are shown in Table 4.14, 4.15 and 4.16 for the construction sector, Table 4.17, 4.18 and 4.19 for the consumer products sector, Table 4.20, 4.21 and 4.22 for the industrial products sector, Table 4.23, 4.24 and 4.25 for the plantations sector, Table 4.26, 4.27 and 4.28 for the properties sector, Table 4.29, 4.30 and 4.31 for the trading and services sector. The first regression models include the dummy for crisis because it gives more significant results and R squared is higher which indicates that higher explanation on the dependent variable. The second regression results are shown in Table 4.32, Table 4.33, Table 4.34, Table 4.35, Table 4.36 and Table 4.37.

4.3.1   Relationship between working capital policies and firms' performance

4.3.1.1 Construction

4.3.1.1.1 Return on assets

Table 4.14 shows the results for the construction companies when performance is measured by ROA. The results show that all the working capital components (ACP, APP, ICP and CCC) do not have any significant relationship with ROA. Therefore, H1, H2, H3 and H4 are rejected. However,

the study found that working capital policies measured by CATAR and CLTAR consistently show significant results when the analysis was done by using OLS and FEM. In other words, the higher the CATAR is, the higher the firms' profitability will be. This implies that the construction sector is using a lot of current assets in their operation. Hence, according to the theory, a higher usage of current asset means that the sector follows the conservative strategy. Hence, H5a and H5b are accepted. However, the results for CLTAR are mixed. Using OLS the relationship is negatively significant while by using FEM it is positively significant to ROA. The control variables that have significant relationship are the sales growth and leverage.

4.3.1.1.2 Return on equity

Table 4.15 shows the regression analysis between the working capital management and the ROE. The working capital components do not possessed significant relationship to ROE except for the ICP under the fixed effect regression. This indicates that the firms with shorter period in converting inventory to sales will increase the profit. Therefore, H3 is accepted. Meanwhile, H1, H2 and H4 are rejected. The working capital policies have a significant relationship with ROE. The CATAR shows a positive relationship to ROE which indicates that higher current asset in a firm will increase the profit. It showed the same result when profitability is measured by using ROA. Higher current asset implies that this sector is using the conservative approach and therefore H5a and H5b are accepted. Meanwhile, the CLTAR shows mixed results. The positive significant results emerged when using FEM while negative significant result emerged when using OLS. The control variables that

significant are the sales growth and leverage which shows a positive relationship to ROE.

4.3.1.1.3 Tobin's Q

The relationship between the working capital and the firm value measured by Tobin's Q are shown in Table 4.16. Using FEM, the working capital components show a significant relationship with the Tobin's Q. The working capital components do not have a significant relationship with Tobin's Q when the relationship is measured by using OLS. The FEM shows that ACP, APP and CCC have positive relationship with the firms' value except the ICP. Therefore, H1, H2, H4 are accepted. The positive relationship indicates that the longer period in ACP, APP and CCC will increase the firms' value. CATAR is only significant in Model 2 for OLS and FEM regression. Whereas, CLTAR and Tobin's Q are showing negative significant in all models except for Model 1 for fixed effect regression. The control variables that show significant relationship to Tobin's Q are sales growth and leverage.

Table 4.14: Relationship between the working capital management and the profitability (ROA) from year 2008 to 2012 in the construction sector

Sector	Construction (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.0901080	-0.112976 *	-0.131606 **	-0.0913401 **	-0.219074 *	-0.213873**	-0.193980 ***	-0.193457 **
ACP	2.17969e-06				7.57730e-05			
APP		0.000144837				0.000151457		
ICP			0.000511713				-0.000865738	
CCC				1.08535e-05				-1.25745e-05
CATAR	0.226995 ***	0.249352 **	0.248012 ***	0.225905 ***	0.136414 **	0.155679 *	0.140508 **	0.139233 **
CLTAR	-0.172522 **	-0.186862 *	-0.123169 *	-0.171092 **	0.245569 ***	0.218920 ***	0.259365 ***	0.228113 **
SG	0.0452592 **	0.0513447 *	0.0465356 **	0.0450544 **	-0.00354516	0.00230473	-0.0180121	-0.00351389
LEV	0.119465	0.121403	0.0485146	0.118457 *	0.0806993	0.0646477	0.180471	0.0902567
GDP	-0.0487669	-0.0715629	-0.0480731	-0.0434168	-0.0927612	-0.139683	-0.162445	-0.126741
Dcrisis	0.0204985	0.0188651	0.0202208	0.0210234	0.00573800	0.00174408	-0.00589479	0.00248013
R^2	0.324070	0.329502	0.346111	0.324152	0.648758	0.648776	0.673751	0.644555

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

Table 4.15: Relationship between the working capital management and the profitability (ROE) from year 2008 to 2012 in the construction sector

Sector	Construction (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.293687***	-0.359136***	-0.272577***	-0.262608***	-0.636673***	-0.642351 ***	-0.557119***	-0.551678***
ACP	0.000153905				0.000245283			
APP		0.000635220				0.000679413		
ICP			0.000195348				-0.00202329**	
CCC				3.74939e-05				-5.16229e-05
CATAR	0.434921***	0.530625***	0.440457***	0.428775***	0.334314***	0.419378**	0.344859***	0.344945**
CLTAR	-0.231003	-0.282229*	-0.199791	-0.214234*	0.627481***	0.525986***	0.646712***	0.568367***
SG	0.0656875**	0.0885966**	0.0621662**	0.0611466**	-0.0248943	0.00163282	-0.0589105	-0.0245674
LEV	0.287140	0.284802*	0.248563	0.272671*	0.439638*	0.356599*	0.680764***	0.471202*
GDP	0.421567	0.260401	0.356944	0.378001	0.234719	0.0582151	0.0473743	0.118847
Dcrisis	0.0731687	0.0591160	0.0657573	0.0679962	0.0344170	0.0197237	0.00490762	0.0232832
R²	0.293659	0.317337	0.286368	0.285704	0.575923	0.588629	0.611072	0.562607

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

Table 4.16: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the construction sector

Sector	Construction (TQ)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.681814***	0.547144***	0.632099***	0.717796***	0.400108*	0.369944*	0.614292 **	0.563006*
ACP	-7.01062e-06				0.000696051***			
APP		0.000823275				0.00204604**		
ICP			0.000584751				-0.000362181	
CCC				-0.000232551				0.000266248**
CATAR	0.0578559	0.185249*	0.0820271	0.0805759	0.0886808	0.344239***	0.0999156	0.0619589
CLTAR	-0.785751***	-0.868829***	-0.730121***	-0.813179***	-0.332928	-0.630446**	-0.453898 **	-0.402175*
SG	0.0519692	0.0870675	0.0536765	0.0553193	0.0235875	0.103602**	0.0155306	0.0159839
LEV	0.146215	0.158686	0.0658509	0.164827	-0.570351	-0.825393**	-0.451137	-0.504443
GDP	-0.900976	-1.02233	-0.896155	-1.03244	-0.701965	-1.21820	-0.969691	-0.808598
Dcrisis	-0.0275317	-0.0358905	-0.0273957	-0.0406723	-0.0255667	-0.0683638	-0.0530607	-0.0349375
R²	0.662119	0.676514	0.664474	0.665396	0.770779	0.805429	0.741625	0.743852

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

4.3.1.2 Consumer products

4.3.1.2.1 Return on asset

Table 4.17 shows the regression results between the working capital management and the ROA by using OLS and FEM. The working capital components are significant with ROA are APP and ICP in fixed effect regression. Both variables show positive relationship to ROA which indicates that the longer period in payables and inventory turnover will increase the firms' profitability. This relationship has accepted H2 and H3. By using OLS regression, CATAR and ROA were found to be positively significant at 10% level in Model 3 and Model 4. Whereas, CATAR and ROA shows positive significant in all models by using FEM. Higher current assets in a firm indicates that the conservative approach will increase the firms' profitability. It also indicate that lower CATAR which represent the aggressive approach will reduce the firms' profitability. Therefore, H5a and H5b are accepted. On the other hand, CLTAR and ROA show negative significant in all models by using FEM. This indicates that the higher current liabilities will decrease the firms' profitability. The theory states that a firm with higher current liabilities is using the aggressive financing policy. Therefore, the relationship found between CLTAR and ROA indicates that the aggressive financing policy will reduce the firms' profitability and it also indicate that conservative approach will increase the firms' profitability. Therefore, this relationship has accepted H6a and H6b.

4.3.1.2.2 Return on equity

The regression analysis between the working capital management and ROE are shown in Table 4.18. Using FEM, the table shows that the variables that have significant relationship between ROE are APP, CATAR, CLTAR and leverage. The APP and ROE is positively significant at 10% level when ACP, ICP and CCC were not included in the analysis. Thus, making the H2 accepted. By using OLS, only CATAR give positive significant results at 10% level while CATAR shows positive significant at 5% level when using FEM. Higher current assets implies that the firms used the conservative investment approach and therefore this relationship accepts H5a and H5b. The relationship between the CLTAR and ROE is the same as the results with the ROA. Therefore, H6a and H6b are accepted. Leverage shows negative significant at 10% level in the Model 3 (ICP).

4.3.1.2.3 Tobin's Q

Table 4.19 shows the relationship between the Tobin's Q and the working capital. The OLS shows more significant results compared to the FEM. The consumer products segment is affected during the crisis, where the results show a significant negative relationship at 5% level using FEM and at 10% level when using OLS. The OLS regression shows that ACP, ICP and CCC show negative significant related to the Tobin's Q at 5% level. Thus, H1, H3 and H4 are accepted. However, CLTAR is not significantly related to the firms' performance. CATAR shows similar result as in the previous findings from ROA and ROE. Therefore, H5a and H5b are accepted. Leverage shows negative significant relationship to the Tobin's Q by using OLS. Sales growth

show less significant result by using the FEM. It showed that the sales growth

and Tobin's Q is negatively related.

Table 4.17: Relationship between the working capital management and the firms' profitability (ROA) from year 2008 to 2012 in the consumer products

Sector	Consumer products (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.201561	-0.314240	-0.147368	-0.128978	-0.223877	-0.418222	-0.660763	-0.601767
ACP	0.000348335				-0.00160022			
APP		0.00279596				0.00547717**		
ICP			-0.000428879				0.00472248*	
CCC				-0.000578551				0.00295008
CATAR	0.908482	1.03613	0.983844*	1.03617*	2.83479*	2.79355**	2.20309**	2.19365*
CLTAR	-0.650331	-1.07905	-0.754387	-0.863071	-2.25977**	-3.24311**	-1.95547**	-1.59971*
SG	-0.695924	-0.693494	-0.730503	-0.752260	-0.548954	-0.459485	-0.277825	-0.408945
LEV	0.148193	0.444093	0.205482	0.288090	-0.979415	-0.466700	-0.922931	-1.11276
GDP	1.29988	1.57796	1.32068	1.39142	1.37442	1.95482	1.34201	1.22599
Dcrisis	-0.0159959	-0.00330223	-0.0178149	-0.0160185	0.0713915	0.102307	0.103668	0.0797954
R²	0.248738	0.265322	0.250637	0.254209	0.632618	0.649626	0.677368	0.648615

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

Table 4.18: Relationship between the working capital management and the firms' profitability (ROE) from year 2008 to 2012 in the consumer products

Sector	Consumer products (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.179586	-0.289597	-0.134503	-0.115956	-0.153284	-0.356721	-0.588161	-0.524371
ACP	0.000156613				-0.00191783			
APP		0.00250186				0.00519950*		
ICP			-0.000457549				0.00449871	
CCC				-0.000605293				0.00273612
CATAR	1.07350*	1.18788*	1.15412*	1.20730*	3.07640**	3.01297**	2.45067**	2.45534**
CLTAR	-0.453169	-0.843377	-0.573310	-0.684567	-2.12896*	-3.06784**	-1.84440*	-1.52264
SG	-0.647363	-0.641082	-0.678560	-0.700800	-0.538205	-0.451571	-0.278245	-0.406500
LEV	-0.129238	0.134979	-0.0688937	0.0163769	-1.54052	-1.04408	-1.47712*	-1.65362
GDP	0.579281	0.825723	0.598156	0.671846	0.885008	1.45265	0.870579	0.765475
Dcrisis	-0.0770785	-0.0656412	-0.0789099	-0.0769966	0.0305445	0.0603350	0.0617281	0.0388197
R²	0.247111	0.258114	0.249224	0.252312	0.658198	0.670193	0.690711	0.668889

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

Table 4.19: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the consumer products

Sector	Consumer products (TQ)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	1.22417***	0.972879**	1.01540**	1.07639***	0.321803	0.224995	0.160499	0.0417768
ACP	-0.00824123**				-0.00666298			
APP		-0.00496516				-0.0101735		
ICP			-0.00356812**				-0.00203197	
CCC				-0.00378883**				-0.000357155
CATAR	1.15983*	0.940841	1.79805**	2.00664**	1.72164*	1.21141**	1.54572*	1.38167*
CLTAR	1.70036	2.13806	0.361705	-0.139598	2.46023	4.15641	2.22988	2.28759
SG	0.0653630	0.262891	0.0726384	-0.0249441	-0.294778	-0.419849	-0.380071	-0.282472*
LEV	-3.49855*	-4.05148*	-3.06205*	-2.62029*	-2.18151	-2.89906	-2.02668	-1.99829
GDP	-1.37668	-1.98808	-1.37544	-0.939505	-1.39036	-2.06568	-1.06914	-1.08579
Dcrisis	-0.275914**	-0.294587*	-0.285394*	-0.270721*	-0.333632**	-0.380373**	-0.339369**	-0.327047**
R²	0.426342	0.364211	0.396748	0.423496	0.811922	0.825063	0.809234	0.806810

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

4.3.1.3 Industrial products

4.3.1.3.1 Return on assets

Table 4.20 shows the relationship between the working capital management and the firms' performance measured by ROA in the industrial products sector. The OLS regression shows that the working capital components have high significant results to ROA at 1% level. ACP and ROA are positively related when FEM is used. APP and ROA are positively related whereby longer the payable period will increase the profit of the firm. ICP and CCC were shown negative significant to ROA when OLS is used. This relationship has accepted H1, H2, H3 and H4. CATAR and CLTAR give high significant results at 1% level. CATAR shows a significant result by using OLS and shows less significant result in FEM. The relationship between the CATAR and ROA in the industrial products sector shows a positive significant. The higher current assets implies that the firms in this sector used the conservative investment policy and therefore this study has accepted H5a and H5b. CLTAR shows a negative significant to ROA by using FEM. Higher in current liabilities implies that the firms in this sector is using the aggressive approach and therefore H6a and H6b is accepted. The control variable only shows a significant result from the sales growth.

4.3.1.3.2 Return on equity

Table 4.21 shows the relationship between the working capital management and the firms' performance as measured by ROE. In OLS regression, the working capital management shows a significant relationship to the ROE. The APP and CCC are highly significant at 1% level to ROE. The

positive relationship between ROE is found in the ACP and APP. ICP and CCC of the industrial products show a negative relationship to ROE. However, the positive relationship between ROE has been found only in APP and ICP by using FEM. Therefore, this relationship accepts H1, H2, H3 and H4. The relationship between CATAR and ROE is positively significant by using OLS and FEM. Whereby, CLTAR and ROE show negative significant at 1% level by using FEM. Therefore, this study found that higher current assets in a firm will contribute to higher profit which implies that the firms that are using the conservative approach will get a higher profit. Thus, H5a and H5b are accepted. Meanwhile, the study found that lower current liabilities in firms will give higher profit to the firm and this indicates that the conservative financing policy will contribute to a higher profit. Therefore, H6a and H6b are accepted. It also shows a significant result between the sales growth and ROE.

4.3.1.3.3 Tobin's Q

Table 4.22 shows a relationship between the working capital management and the firms' value in the industrial product sector. The global financial crisis which happened in year 2008 and 2009 gives an impact to the firms' value. The regression from OLS and FEM has shown a highly significant relationship between the crisis and the firms' value. APP and ICP show a significantly negative relationship to the Tobin's Q by using OLS. Meanwhile, the FEM shows a negative significant relationship between the APP and the Tobin's Q at 1% level. APP and ICP are negatively significant to Tobin's Q and therefore this study accepts H2 and H3. CATAR is positively related to the Tobin's Q in OLS and FEM regression. Higher current assets will increase the profit to the firm and this indicates that using the conservative

approach will lead to a higher profit compared to the aggressive approach. Therefore, H5a and H5b are accepted. This study does not find a significant result between the CLTAR and Tobin's Q. The industrial products show a negative significant relationship between the leverage and Tobin's Q.

Table 4.20: Relationship between the working capital management and the firms' profitability (ROA) from year 2008 to 2012 in the industrial products sector

Sector	Industrial products (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Constant	0.00943798	0.00263324	0.00930509	-0.00531778	0.0425068	0.0274289	0.0288851	0.0284306
ACP	7.69479e-05				0.000148799*			
APP		3.45335e-05***				6.06696e-05***		
ICP			-0.000241725***				0.000222178*	
CCC				-6.56827e-05***				-3.28840e-05
CATAR	0.142359***	0.162507***	0.200948***	0.195612***	0.101935	0.165788**	0.123943	0.175650**
CLTAR	-0.138563	-0.149354*	-0.162926**	-0.164564**	-0.335383***	-0.395667***	-0.348013***	-0.376220***
SG	0.0556280***	0.0562995***	0.0392576**	0.0524732***	0.0264690	0.0287910*	0.0308846*	0.0251800
LEV	-0.0520673	-0.0276254	-0.00710839	0.00427650	0.122356	0.176267	0.113765	0.160558
GDP	-0.107722	-0.111230	-0.0644412	-0.100381	0.0268982	0.0300929	0.00618511	0.0280085
Dcrisis	-0.000518006	-0.00265108	0.000943260	-0.00395788	-0.000112430	-0.00240907	-0.00128066	-0.00118009
R²	0.360062	0.366444	0.424920	0.390979	0.773658	0.777208	0.779042	0.770878

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

Table 4.21: Relationship between the working capital management and the firms' profitability (ROE) from year 2008 to 2012 in the industrial products sector

Sector	Industrial products (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.0835185	-0.0946401	-0.0602912	-0.0940523	0.0457498	0.00885089	0.0166667	0.00711987
ACP	0.000416682*				0.000334244			
APP		0.000115098***				0.000169692***		
ICP			-0.000290557**				0.000415852**	
CCC				-0.000131300***				-0.000125104
CATAR	0.306006**	0.379596***	0.389456***	0.423019***	0.363479	0.513863**	0.423859*	0.564103**
CLTAR	-0.134983	-0.178380	-0.179306	-0.199153	-0.912859***	-1.07479***	-0.941042***	-1.04932***
SG	0.175583***	0.177714***	0.155690***	0.169102***	0.143372***	0.151128***	0.150779***	0.142037***
LEV	-0.205587	-0.108765	-0.120470	-0.0677586	0.144959	0.290616	0.132371	0.275770
GDP	-0.182978	-0.209315	-0.160591	-0.192333	0.163660	0.175051	0.123221	0.174831
Dcrisis	0.00784165	-0.000699843	0.00670044	-0.00138420	0.0246465	0.0182200	0.0224619	0.0205767
R²	0.333111	0.334078	0.331846	0.339085	0.773354	0.780938	0.775501	0.774153

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

Table 4.22: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the industrial products sector

Sector	Industrial products (TQ)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.731637***	0.722856***	0.653146***	0.651654***	0.352621*	0.378840*	0.378029*	0.375520*
ACP	-0.000729030				-0.000264550			
APP		-0.000122449**				-0.000101380***		
ICP			-0.00110141***				-0.000460348	
CCC				-8.85963e-05				4.29196e-05
CATAR	0.521998**	0.432226**	0.745579***	0.560366**	1.10862**	0.996443**	1.07808***	0.988190**
CLTAR	-0.668185	-0.608762	-0.729110*	-0.664623	-0.159726	-0.0576937	-0.137124	-0.100692
SG	0.116810	0.114732	0.0429354	0.113107	-0.0490074	-0.0526426	-0.0588300	-0.0462424
LEV	-0.511770	-0.642164	-0.410405	-0.515600	-1.15366***	-1.24474***	-1.13311***	-1.20792***
GDP	-1.47780*	-1.42366*	-1.18189	-1.39176*	-0.898389	-0.903251	-0.856783	-0.897731
Dcrisis	-0.128507***	-0.116866**	-0.112199**	-0.125703***	-0.0898607**	-0.0860235**	-0.0874386**	-0.0884696**
R^2	0.286183	0.280253	0.319038	0.278375	0.852400	0.852645	0.853252	0.852052

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

4.3.1.4 Plantations

4.3.1.4.1 Return on assets

Table 4.23 shows a relationship between the working capital management and the firms' profitability as measured by ROA from the plantation sector. The regression analysis from OLS and FEM has shown that the working capital components in the plantation sector have a significant and negative relationship to ROA. Thus, this relationship has accepted the H1, H2, H3 and H4. On the other hand, CATAR shows a positive significant relationship to ROA by using OLS and FEM. This relationship indicates that higher current assets or by using the conservative investment policy will contribute to a higher profit in a firm and therefore, H5a and H5b are accepted. CLTAR shows less significant to ROA since it only shows a significant result in Model 3 (ICP) and Model 4 (CCC). The positive relationship between the CLTAR and ROA was found in this study. This relationship shows that higher current liabilities or using aggressive financing policy in the firm will give higher profits. Therefore, H6a and H6b are accepted. The leverage and sales growth only shows positive relationship to ROA by using the FEM.

4.3.1.4.2 Return on equity

Table 4.24 shows the relationship between the working capital management and the firms' profitability as measured by ROE from the plantations sector. The significant relationship is found in the working capital components on ROE. The working capital components (ACP, APP, ICP and CCC) show a negative relationship to ROE. Therefore, H1, H2, H3 and H4 are accepted. CATAR and CLTAR show a highly significant result by using FEM.

The CATAR and ROE show positive relationship which is similar to the previous results in construction, consumer products and industrial products sectors. Higher current assets used in firm will give higher profit and it indicates that the conservative investment policy will contribute to a higher profit compared to the aggressive investment policy. This relationship accepts H5a and H5b. On the other hand, the CLTAR shows a positive significant relationship to ROE and it shows a different result from the previous sector. The plantation sector showed the positive relationship between the CLTAR and the firms' profitability measured by ROA and ROE. This indicates that the higher current liabilities firms will lead to a higher profit and therefore it implies that this sector has employed the aggressive financing policy. Hence, this study accepts H6a and H6b. Sales growth and leverage have positive relationship to ROE.

4.3.1.4.3 Tobin's Q

Table 4.25 shows the relationship between the working capital management and the firms' value in the plantations sector. The working capital components (ACP, APP, ICP and CCC) show a highly significant relationship on the Tobin's Q by using OLS. The FEM only shows a significant relationship between the Tobin's Q from ICP and CCC. The working capital components in the plantation sector show negative relationship on the Tobin's Q. Thus, H1, H2, H3 and H4 are accepted. The positive relationship on the CLTAR and Tobin's Q is shown in FEM. This relationship is shown in ROA and ROE. Higher current liabilities used will give a higher profit. Therefore, it indicates that the firms in this sector used the aggressive financing policy. Thus, H6a

and H6b are accepted. This sector also showed that the leverage and Tobin's Q are positively related in FEM.

Table 4.23: Relationship between the working capital management and the firms' profitability (ROA) from year 2008 to 2012 in the plantations sector

Sector	Plantations (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	-0.0230760	-0.0186007	-0.0386109	-0.0391179	-0.0666745*	-0.0549895	-0.0558400*	-0.0577151*
ACP	-0.000247370***				-0.000106925**			
APP		-0.000194114***				-0.000353210**		
ICP			-1.16369e-05***				-3.02731e-05***	
CCC				-1.18722e-05***				-3.10460e-05***
CATAR	0.167416*	0.168464*	0.205713**	0.206289**	0.203344	0.303064*	0.240158	0.241878
CLTAR	0.0692375	0.0549736	0.0422593	0.0423167	0.278519	0.228793	0.265369*	0.267224*
SG	0.00473395	0.0134632	0.0174132	0.0170284	0.0180209	0.0322734**	0.0367640***	0.0357849***
LEV	0.0517385	0.0383357	0.0698000	0.0713529	0.105187**	0.0471606	0.0780548**	0.0848741**
GDP	0.345088	0.361382	0.329898	0.329360	0.178427	0.194686	0.255959	0.254202
Dcrisis	0.00644123	0.000421114	-0.00103315	-0.000779223	-0.00414065	-0.0168164	-0.0101780	-0.00967659
R²	0.413011	0.513704	0.539780	0.537065	0.635546	0.710239	0.757626	0.755227

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

Table 4.24: Relationship between the working capital management and the firms' profitability (ROE) from year 2008 to 2012 in the plantations sector

Sector	Plantations (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Constant	-0.0578673	-0.0522482	-0.0827239*	-0.0836009*	-0.201877***	-0.171535**	-0.170403***	-0.173867***
ACP	-0.000390441**				-0.000433333***			
APP		-0.000288792***				-0.000541524**		
ICP			-1.93302e-05***				-5.89037e-05***	
CCC				-1.98115e-05***				-6.18293e-05***
CATAR	0.277519	0.280808	0.339558**	0.340665**	0.642673	0.690070**	0.626090**	0.633119**
CLTAR	0.251302	0.233543	0.203327	0.202926	0.574720**	0.522580*	0.569285**	0.571938**
SG	-0.00828574	0.00607986	0.0115172	0.0108558	0.0244184	0.0485337**	0.0627810***	0.0616483***
LEV	0.149061	0.124395	0.183379 *	0.186505*	0.346704***	0.231088***	0.271624***	0.284447***
GDP	0.572228	0.586641	0.555968	0.555779	0.0865113	0.136936	0.258691	0.258280
Dcrisis	0.0183820	0.00895181	0.00639869	0.00680532	-0.0237969	-0.0381624	-0.0313057	-0.0306757
R²	0.493193	0.543427	0.595455	0.595138	0.744477	0.774046	0.852296	0.855852

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

Table 4.25: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the plantations sector

Sector	Plantations (TQ)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.424988	0.435445	0.149925	0.141404	0.344102**	0.348898**	0.365393**	0.364111**
ACP	-0.00458127***				-0.000328411			
APP		-0.00271300***				0.000541653		
ICP			-0.000179370***				-3.14999e-05**	
CCC				-0.000184830***				-3.74636e-05***
CATAR	1.52032	1.62164	2.16988	2.18181	0.115309	-0.230410	0.0685859	0.0837376
CLTAR	-1.16438	-1.19016	-1.46156	-1.47073	2.44386*	2.56416*	2.44960*	2.44806*
SG	-0.120322	0.0708033	0.122368	0.115986	0.0611406	0.0434224	0.0824682	0.0842523
LEV	1.52610*	1.10182	1.64251	1.67752*	0.518860**	0.559129*	0.469144*	0.474623*
GDP	1.00542	0.740445	0.434466	0.440474	-0.214788	-0.193120	-0.113561	-0.104478
Dcrisis	-0.0823737	-0.190264	-0.213820	-0.210213	-0.0407603	-0.0120587	-0.0429570	-0.0436896
R^2	0.384328	0.390784	0.470882	0.473655	0.909214	0.909943	0.909692	0.909915

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

4.3.1.5 Properties

4.3.1.5.1 Return on assets

The relationship between the working capital management and the ROA is shown in Table 4.26. The results from OLS and FEM show that the working capital components (ACP, APP, ICP and CCC) are significantly negative related to the ROA at 1% level. Thus, H1, H2, H3 and H4 are accepted. However, there is no relationship between the working capital policies (CATAR and CLTAR) and ROA. The sales growth show less significant relationship to the ROA in Model 2 (APP).

4.3.1.5.2 Return on equity

The relationship between the working capital management and the ROE is showed in Table 4.27 and it shows similarity to ROA. It shows that the working capital components (ACP, APP, ICP and CCC) are negatively related to ROE. Therefore, H1, H2, H3 and H4 are accepted.

4.3.1.5.3 Tobin's Q

The relationship between the working capital management and the firms' value is shown in Table 4.28. The properties sector is affected during the crisis whereby it shows that the dummy for the crisis and the firms' value are significant and negatively related. The working capital components except ACP show a significant result by using OLS. However, the relationship between the working capital components and the firms' value is positively related which contradicted with the previous findings on ROA and ROE. The relationship indicates that the shareholders' will give more value to the firms

that has longer period in payable, inventory turnover and also cash conversion cycle. These relationship accepted H1, H2, H3 and H4. There is a positive relationship in the CATAR and the Tobin's Q. Higher current assets used in firms will increase the firms' value. According to the theory, a higher usage of current asset means that the sector follows the conservative strategy. Hence, H5a and H5b are accepted. The OLS and FEM results also show that the growth in GDP and the firms' value were significant. In addition, the leverage and the Tobin's Q are negatively related by using FEM.

Table 4.26: Relationship between the working capital management and the firms' profitability (ROA) from year 2008 to 2012 in the properties sector

Sector	Properties (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.0373131	0.0446187	0.0400514	0.0395748	0.0176040	0.0380052	0.0318835	0.0303712
ACP	-6.24184e-05***				-3.95407e-05**			
APP		-5.34288e-05***				-3.91980e-05***		
ICP			-4.47217e-06***				-2.65674e-06***	
CCC				-4.57719e-06***				-2.63973e-06***
CATAR	0.00282022	-0.0259996	-0.0136356	-0.0112297	0.0615401	0.0177713	0.0215852	0.0246409
CLTAR	0.0790912	0.103305	0.0618431	0.0588796	0.00575070	0.0182588	0.00899814	0.00829728
SG	-0.00246609	0.00314289	-0.000635276	-0.00108697	0.00270607	0.00642871*	0.00385896	0.00361666
LEV	-0.00895853	-0.0283829	-0.0180910	-0.0166550	-0.0585626	-0.0786427	-0.0615407	-0.0600091
GDP	0.0758683	0.0757322	0.108275	0.108137	0.102634	0.0973748	0.125540	0.126145
Dcrisis	-0.0108860	-0.00881949	-0.00519736	-0.00523053	-0.00685640	-0.00548678	-0.00404532	-0.00415191
R^2	0.243502	0.248654	0.254418	0.255462	0.553036	0.563673	0.553310	0.552394

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

Table 4.27: Relationship between the working capital management and the firms' profitability (ROE) from year 2008 to 2012 in the properties sector

Sector	Properties (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.0383042	0.0474327	0.0417414	0.0411453	0.0154751	0.0397534	0.0313049	0.0295302
ACP	-7.45313e-05***				-4.48936e-05**			
APP		-6.52472e-05***				-4.61161e-05**		
ICP			-5.41235e-06***				-2.96798e-06***	
CCC				-5.53049e-06***				-2.93743e-06***
CATAR	0.00345146	-0.0309558	-0.0159947	-0.0131123	0.0709336	0.0203088	0.0259129	0.0293955
CLTAR	0.154974	0.183365	0.133397	0.129935	0.0823677	0.0961283	0.0864190	0.0857265
SG	-0.00379645	0.00301871	-0.00160131	-0.00214818	0.00276211	0.00704888	0.00409122	0.00382644
LEV	0.0391175	0.0153632	0.0280453	0.0298006	-0.0339080	-0.0584756	-0.0368168	-0.0349990
GDP	0.128083	0.125700	0.165982	0.165912	0.153054	0.144526	0.179682	0.180504
Dcrisis	-0.0123979	-0.00984929	-0.00549847	-0.00555149	-0.00840170	-0.00681173	-0.00525182	-0.00538046
R²	0.271585	0.279106	0.281810	0.282289	0.564148	0.572934	0.563732	0.563019

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

Table 4.28: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the properties sector

Sector	Properties (TQ)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.356995***	0.329927**	0.332483***	0.334714***	0.551207***	0.518139***	0.526973***	0.529881***
ACP	6.59678e-05				3.52597e-05			
APP		0.000125718**				5.64520e-05		
ICP			1.40589e-05***				3.82383e-06	
CCC				1.40499e-05**				3.70041e-06
CATAR	0.347240*	0.377445**	0.338423*	0.331968*	-0.123800	-0.0723555	-0.0778648	-0.0828539
CLTAR	-0.317540	-0.318221	-0.172686	-0.168086	0.818606	0.813333	0.826653	0.826886
SG	0.0273455	0.0157960	0.0242441	0.0256720	-0.00719763	-0.0113200	-0.00762008	-0.00732188
LEV	0.0123407	0.0596369	0.0436108	0.0384355	-0.575686*	-0.534182	-0.558835*	-0.561954*
GDP	-1.70603***	-1.59984***	-1.63746***	-1.64068***	-2.21532***	-2.17652***	-2.21712***	-2.21924***
Dcrisis	-0.117286**	-0.123343***	-0.137092***	-0.136501***	-0.191208***	-0.192895***	-0.194969***	-0.194734***
R²	0.329355	0.350059	0.372476	0.370632	0.760795	0.763138	0.762273	0.762078

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

4.3.1.6 Trading and services

4.3.1.6.1 Return on assets

The relationship between the working capital management and the ROA is shown in Table 4.29. It shows less significant results from the working capital components and the ROA by using OLS. The negative relationship is illustrated between the working capital components and ROA. However, APP is not significant. These relationships accept H1, H3 and H4. There are less significant results between the CLTAR and the ROA which is significant at 10% level. The negative relationship is only found in Model 1 by using ACP in the regression model. According to the theory, lower current liabilities indicate that the firm is using the conservative financing policy. This study has found that the conservative financing policy will increase the profit. Therefore, H6a and H6b are accepted. By using FEM, the sales growth and the ROA are positively significant.

4.3.1.6.2 Return on equity

Table 4.30 show the relationship between the working capital and the ROE in the trading and service sector. Similar results were found between the working capital and the ROE as in ROA. The OLS regression shows significant results between the ACP, ICP, CCC and ROE. Therefore, H1, H3 and H4 are accepted. Furthermore, the sales growth is found to be positively significant by using FEM.

4.3.1.6.3 Tobin's Q

Table 4.31 shows the relationship between the working capital and the firms' value from the trading and services sector. The negative relationship

between the working capital components (ACP, ICP and CCC) and the firms'
value is found by using OLS. APP is negatively significant to the Tobin's Q
by using FEM. Therefore, H1, H2, H3 and H4 are accepted. Moreover, the
GDP and crisis are significant in Model 2 (APP) by using OLS.

Table 4.29: Relationship between the working capital management and the firms' profitability (ROA) from year 2008 to 2012 in the trading and services sector

Sector	Trading and services (ROA)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.0479156	0.0595505	0.0494752	0.0475417	0.0677204	0.0656111	0.0694049	0.0696986
ACP	-0.000188340*				3.11712e-05			
APP		-0.000261167				0.000105148		
ICP			-4.84367e-05**				1.61427e-05	
CCC				-4.15732e-05**				1.56345e-06
CATAR	0.133417	0.0548071	0.0935205	0.106898	0.144230	0.148871	0.146643	0.148243
CLTAR	-0.266674*	-0.158152	-0.227304	-0.245715	-0.268313	-0.289066	-0.273375	-0.272704
SG	0.0123890	0.0106381	0.0116678	0.0121317	0.0182777***	0.0190783***	0.0197929	0.0174769**
LEV	0.107294	0.0720786	0.0614925	0.0696822	-0.104095	-0.0979856	-0.102767	-0.100749
GDP	0.157926	0.0783925	0.153548	0.163613	0.183527	0.201698	0.180210	0.188499
Dcrisis	-0.0173397	-0.0242508	-0.0189797	-0.0179292	-0.0187940	-0.0168246	-0.0186757	-0.0182702
R^2	0.085955	0.072868	0.073692	0.074991	0.646111	0.647128	0.646041	0.645934

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

Table 4.30: Relationship between the working capital management and the firms' profitability (ROE) from year 2008 to 2012 in the trading and services sector

Sector	Trading and services (ROE)							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	0.141089	0.170377	0.145940	0.140368	0.0826851	0.0763060	0.0937166	0.0940261
ACP	-0.000577755*				0.000213474			
APP		-0.000632109				0.000516439		
ICP			-0.000130909**				0.000132533	
CCC				-0.000119174**				5.54663e-05
CATAR	0.276490	0.0475501	0.146856	0.188459	0.567407	0.598792	0.581179	0.582829
CLTAR	-0.680148	-0.381607	-0.553513	-0.608922	-0.889506	-1.00083	-0.924456	-0.906429
SG	0.0258388	0.0222714	0.0242676	0.0253094	0.0672717***	0.0691154***	0.0811791*	0.0697260***
LEV	0.351762	0.234984	0.210190	0.234148	-0.0968484	-0.0594563	-0.0911372	-0.0872719
GDP	0.0324341	-0.186034	0.00595809	0.0406706	0.0880578	0.189719	0.0520928	0.0809239
Dcrisis	-0.0333903	-0.0523945	-0.0391066	-0.0357872	-0.0451270	-0.0342455	-0.0450058	-0.0444113
R²	0.114713	0.081214	0.087007	0.092022	0.701609	0.705251	0.701425	0.700502

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

Table 4.31: Relationship between the working capital management and the firms' value (TQ) from year 2008 to 2012 in the trading and services sector

Sector	Trading and services							
Regression	OLS	OLS	OLS	OLS	FE	FE	FE	FE
Variables	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Constant	1.80867**	2.06516**	1.83240**	1.81162**	1.36307***	1.44993***	1.38524***	1.36795***
ACP	-0.00278867**				0.000358861			
APP		-0.00609019				-0.00159559*		
ICP			-0.000548849**				6.53342e-05	
CCC				-0.000448916**				0.000381160
CATAR	-0.761790	-2.08625	-1.42153	-1.28766	-1.35966	-1.31176	-1.31679	-1.41131
CLTAR	-0.0302840	2.02846	0.608486	0.418250	1.47198	1.65746	1.41529	1.52812
SG	-0.136743	-0.186388	-0.141317	-0.135371	-0.0459215	-0.0868417	-0.0478378	0.00927103
LEV	-0.664345	-1.07067	-1.35270	-1.26583	-1.08854	-1.07952	-1.05471	-1.15826
GDP	-0.289538	-1.80266*	-0.478590	-0.388958	-0.889762	-0.994420	-0.855333	-1.16667
Dcrisis	-0.198277	-0.329489*	-0.229087	-0.218744	-0.229464	-0.242695	-0.224327	-0.246730
R^2	0.118876	0.151065	0.072748	0.071969	0.853475	0.856095	0.853247	0.854283

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

4.3.2   Relationship between working capital policies and firms' performance

4.3.2.1 Construction sector

Table 4.32 shows the relationship between the working capital policies and the firms' performance in the construction sector. The variables that show significant results with firms' performance are D(CIP), D(AFP), D(CFP), sales growth, leverage and annual GDP growth. By using FEM, D(AFP) shows highly significant at 1% level when the firms' performance is measured by ROE and ROA. D(AFP) shows a positive relationship to the firms' profitability, but negatively related to the firms' value when measured by Tobin's Q. This indicates that the aggressive financing policy will increase the profit for the firm but at the same time the aggressive financing policy will reduce the shareholders' value. D(CIP) and D(CFP) shows a significant results with the Tobin's Q by using OLS. D(CIP) is negatively related to the Tobin's Q which indicates that the conservative investment policy will reduce the shareholders' value. D(CFP) and Tobin's Q are positively related which indicates that the conservative financing policy will increase the shareholders' value. The entire control variable shows significant results with the firms' performance. Therefore, this study accepts H5b, H6a and H6b.

4.3.2.2 Consumer products sector

Table 4.33 shows a relationship between the working capital policies and the firms' performance in the consumer products sector. The variables that show a significant results are D(CFP), D(AIP), leverage, sales growth and annual GDP growth. D(CFP) and ROE are found to be positively related which indicates that the conservative financing policy increase the firms'

performance. The negative and significant relationship between the D(AIP) and Tobin's Q indicates that the aggressive investment policy reduce the shareholders' value. Thus this study is accepts H5a and H6b.

4.3.2.3 Industrial product sector

Table 4.34 shows a relationship between the working capital policies and the firms' performance in the industrial products sector. All dummy variables of the working capital policy have shown a significant relationship with the firms' performance. This indicates that the working capital policy can influence the firms' performance. D(AIP) is negatively related with the firms' performance which indicates that the aggressive strategy will reduce the firms' performance. D(CIP) and D(AFP) are only found to be negatively significant in the ROA and ROE by using FEM. This indicates that the conservative investment policy and the aggressive financing policy will decrease the firms' profitability. D(CFP) is positively related to the firms' performance which indicates that the conservative financing policy will increase the firms' profitability and also the shareholders' value. Hence, this study accepts H5a, H5b, H6a and H6b.

4.3.2.4 Plantations sector

The relationship between the working capital policy and the firms' performance in the plantations sector is shown in Table 4.35. The plantations sector does not show any significant result between the working capital policy and the firms' performance. Therefore, this study rejects H5a, H5b, H6a and

H6b. The control variable that shows a significant result is the leverage which is positively related with ROE.

4.3.2.5 Properties sector

The relationship between the working capital policy and the firms' performance in the properties sector is shown in Table 4.36. D(AIP) is found to be significantly positive with the ROA by using OLS. This indicates that the aggressive investment policy will increase the firms' profitability. D(CIP) is positively significant with the ROA and Tobin's Q which indicates that the conservative investment policy will increase the firms' performance. The D(CFP) and the firms' profitability is negatively related but it is positively related with the shareholders' value. The entire variables show a positive significant result with firms' performance. Therefore, this study accepts H5a, H5b and H6b.

4.3.2.6 Trading and services

The relationship between the working capital policy and the firms' performance in the trading and services sector is shown in Table 4.37. By using OLS, only D(CIP) and D(AFP) are significant. D(CIP) is negatively related with the Tobin's Q. This indicates that the conservative investment policy will decrease the shareholders' value. D(AFP) is negatively related with the Tobin's Q which indicates that the aggressive financing policy will decrease the shareholders' value. The D(CFP) is found to be negatively related with the Tobin's Q by using FEM. This indicates that the conservative financing policy will reduce the shareholders' value. Sales growth is significant to the firms'

profitability measured by ROA and ROE by using FEM. Hence, this study accepts H5b, H6a and H6b.

Table 4.32: Relationship between the working capital policies and the firms' performance in the construction sector

Sector	Construction					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.0219766	-0.104195	0.0208061	-0.0134931	0.464406***	0.446497***
Dcip	0.0279682	0.0336236	0.0134649	0.0238116	-0.132979**	-0.0310356
Dafp	0.0194465	0.226356***	0.00108841	0.0737259***	-0.112509**	-0.0570519**
Dcfp	0.0360753	-0.0153663	0.0345786	-0.0316894	0.264955***	0.113945
SG	0.0411754	0.0388621	0.0289627*	0.0186977	-0.00875395	-0.0165980
LEV	0.0278493	0.392787**	-0.0274995	0.0384191	-0.0695207	-0.473625
GDP	-0.605609**	-0.546205	-0.407978*	-0.233798	-1.04548	-0.578179
R²	0.085756	0.506801	0.167930	0.631602	0.655496	0.733311

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

Table 4.33: Relationship between the working capital policies and the firms' performance in the consumer products sector

Sector	Consumer products					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.342549***	0.598040**	0.207396**	0.414598*	1.60807***	1.05630***
Daip	-0.131117	0.0350612	-0.0913769	0.0411804	-0.152860	-0.152725*
Dcip	0.178511	0.598698	0.153613	0.568956	0.505296	0.422536
Dafp	-0.116292	-0.0659668	-0.120105	0.0409735	-0.102322	-0.0711901
Dcfp	-0.112086*	0.0415904	-0.0557816	0.0621305	-0.434837	-0.270991
SG	-0.710112	-0.801340	-0.753981	-0.782012	0.258225	-0.289884**
LEV	-0.732803**	-2.96861**	-0.453480*	-2.40922*	-3.42757**	-1.51988**
GDP	1.62804	1.60961	1.64276	1.60561	1.60119	2.61239**
R^2	0.186847	0.586693	0.190207	0.547626	0.357713	0.798797

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

Table 4.34: Relationship between the working capital policies and the firms' performance in the industrial products sector

Sector	Industrial products					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.113275	0.0483068	0.0518256*	0.0172755	0.573490***	0.853238***
Daip	-0.101136*	-0.0525038	-0.0398757**	-0.0137296	-0.184575**	-0.138536**
Dcip	-0.0140874	-0.0373596**	0.00322280	-0.0154489*	0.0204114	0.0377416
Dafp	-0.0692563	-0.231584***	-0.00274917	-0.0777606**	0.00764465	0.0247460
Dcfp	0.0137379	0.0838158**	0.0322728*	0.0401879**	0.237987**	0.0632358
SG	0.185920***	0.132586**	0.0605625***	0.0224096	0.107657	-0.0110229
LEV	-0.277916	-0.153742	-0.121485	0.00830427	-0.745919**	-1.67134***
GDP	-0.290412	-0.0666451	-0.110642	0.0448773	0.0541209	0.0875167
R²	0.282016	0.748063	0.322829	0.759846	0.301547	0.841656

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

Table 4.35: Relationship between the working capital policies and the firms' performance in the plantations sector

Sector	Plantations					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.173246**	0.133412***	0.0856252**	0.0691891***	0.573369***	0.806761***
Daip	-0.0237179	-0.0729458	-0.0206596	-0.0388156	-0.267805	0.00132575
Dcfp	-0.121306	-0.0738057	-0.0486420	-0.0300270	0.117264	-0.159661
SG	0.0261730	0.0116315	0.0233843	0.0158807	0.0365037	-0.00278395
LEV	0.173526***	0.241265***	0.0403281	0.0682693	0.570197	0.186483
GDP	0.163544	0.345358	0.171570	0.246078	1.33165	0.583600
R^2	0.382542	0.669724	0.247170	0.616733	0.105614	0.895590

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

Table 4.36: Relationship between the working capital policies and the firms' performance in the properties sector

Sector	Properties					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.0654279**	0.0472267*	0.0377584*	0.0247783	0.306582***	0.344351***
Daip	0.0252342	-0.00970085	0.0225737*	-0.00967706	-0.0149754	0.00247508
Dcip	0.0220035	0.0275216	0.0189009	0.0224971*	0.145572**	0.0578854
Dcfp	-0.0640782***	-0.0186344	-0.0373372**	-0.00175750	0.0398582	0.0794941*
SG	-0.000599470	0.00635003*	-0.000600729	0.00480813*	0.0237122	0.00862003
LEV	0.127864*	0.0151221	0.0528654	-0.0342632	-0.0661753	-0.332243
GDP	0.350332*	0.291893	0.262030*	0.221999	-0.533969	-0.407501
R²	0.322952	0.575413	0.253493	0.553645	0.269205	0.651327

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

Table 4.37: Relationship between the working capital policies and the firms' performance in the trading and services sector

Sector	Trading and services					
	OLS	FE	OLS	FE	OLS	FE
Variables	ROE		ROA		TQ	
Constant	0.00667495	0.104084	0.00799669	0.0611054	1.34438***	1.12666***
Daip	0.0551927	0.0854987	0.0201562	0.0300924	0.107537	-0.130701
Dcip	-0.00267332	0.0556357	0.00689372	0.00763482	-0.647790**	-0.0439796
Dafp	-0.482315	-0.368905	-0.156990	-0.121105	-0.587144**	-0.227933
Dcfp	0.0148146	0.0422524	0.00423811	-0.00152979	-0.392512	-0.470417*
SG	0.0144703	0.0453534***	0.00667914	0.0132329**	-0.0997104	-0.0272652
LEV	0.0549648	-0.523931	-0.00943294	-0.231734	-1.11474	-0.146869
GDP	0.608455	0.589328	0.405909	0.404611	2.68034	2.24836
R²	0.105504	0.701922	0.063337	0.648579	0.074617	0.855192

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

4.4   Conclusion

Higher R squared in regression analysis indicates that the regression model has explained its dependent variable. The independent variable explains the Tobin's Q more than it explains the ROA and ROE. The sector that has higher R squared is the plantation with 90.99% explained by the Tobin's Q. On contrary, the lowest R squared is the trading and services with only 7.2% explained by the Tobin's Q.

The sector that gives a significant result between the crisis and the firm performance are the consumer products, industrial products and properties. These three sectors are affected by the global financial crisis in the year 2008 to 2009, whereas the construction, plantation, trading and services are not being affected during the global financial crisis. Moreover, the crisis is only significant to the firms' value as measured by the Tobin's Q. The study does not find any significant results between the crisis and the firms' profitability. This indicates that the market value of firms is affected during the crisis but the profitability of firms is not affected during the crisis.

This study shows that the ACP and the firms' performance are negatively related in all sectors except for the construction and the industrial products sectors. The construction sector has a positive relationship to the firms' performance as measured by the Tobin's Q. On the other hand, the industrial products have a positive relationship to the firms' performance as measured by the ROA and ROE.

The relationship between the APP and the firms' performance has shown mixed results. Sectors that have negative relationship between the APP

and the firms' performance are the plantations, trading and services sectors. The sectors that have positive relationship between the APP and the firms' performance are the construction and consumer products. The two sectors that have positive and negative results are the industrial products and properties.

All sectors have shown a negative relationship between the ICP and the firms' performance. However, there are some sectors that show positive and negative relationship to the firms' performance which are the consumer products, industrial products and properties. Therefore, it can be concluded that all the six sectors show a negatively significant relationship between the ICP and the firms' performance.

This study shows that the CCC and the firms' performance are negatively related in consumer products, industrial products, plantations, properties, trading and services. However, the construction industry showing the positive relationship between the CCC and the firms' performance as measured by the Tobin's Q. This indicates that the longer CCC in a firm is more preferable to the shareholders'.

All sectors show positive relationship between the CATAR and the firms' performance. The relationship indicates that the conservative investment policy is a policy which carries a higher amount of current assets will contribute to negative firms' profitability and value. A negative relationship between the CLTAR and the firms' performance is found in all sectors except for the plantations. In addition, the properties sector does not give any significant result between the CLTAR and the firms' performance. The negative relationship between the CLTAR and the firms' performance

indicates that the higher current liabilities in a firm will be a factor towards lower firms' performance.

The study on the working capital policies and the firms' performance provides more precise results when it was conducted by using the dummy variables. All sectors show that the working capital policies may affect the firms' performance except for the plantations sector. The aggressive investment policy is only significant in the consumer products, industrial products and properties sectors. The consumer products and industrial products sectors were found that the aggressive investment policy is negatively significant to the firms' performance while for the properties sector, it is found that the aggressive investment policy is positively related to the firms' performance. The aggressive financing policy is only found significant to the firms' performance in the construction, industrial products, and trading and services sectors. The aggressive financing policy is positively related to the firms' performance in the construction sector whereas the aggressive financing policy is negatively related to the firms' performance in the industrial products and also in trading and services sectors.

The control variables in this study are the sales growth, leverage and GDP. The sales growth has shown positive relationship to the firms' performance in all sectors except in the consumer products sector. This sector shows a negative relationship between the sales growth and the firms' performance as measured by the Tobin's Q. Shareholders tend to put more value when the consumer products sector recorded the negative sales growth. For control variables, the leverage produced mixed results towards the firms' performance. The leverage and the firms' value show a negative relationship

which indicates that the shareholders' tend to give more value to the firm if they used the lower leverage financing. However, the profitability of the firms will be higher if they used more leverage financing. The GDP and the firms' performance are negatively related and only significant in the industrial products and the properties sectors.

In conclusion, the working capital management and the working capital policies provide significant relationship to the firms' performance in all sectors and bring different results from each sector. Different results occurred due to the different working capital practices among sectors which has been supported by Weinraub and Visscher (1998), Salawu (2006), Afza and Nazir (2008). Most sectors found that the working capital components (ACP, APP, ICP and CCC) and the firms' performance are negatively related. This relationship was supported by the previous studies done by Deloof (2003), Charitou *et al.* (2010), Karaduman *et al.* (2010), Garcia *et al.* (2011), Mansoori and Muhammad (2012), Napompech (2012), Sabri (2012), Mumtaz *et al.* (2013) and Ukaegbu (2014). On the Other hand, the positive relationship between the CATAR and the firms' performance has been supported by Afza and Nazir (2008), Al-Shubiri (2011), Palani and Mohideen (2012) and; Chaklader and Shrivastava (2013). The relationship between the CLTAR and the firms' profitability are significantly negative which was supported by the previous findings by Afza and Nazir (2008), Al-Shubiri (2011), Palani and Mohideen (2012). While, the positive relationship found between the CLTAR and the firms' value has been supported by Afza and Nazir (2009) and; Palani and Mohideen (2012).

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1   Conclusion

In conclusion, all variables produce significant results which show the existing of a relationship between the working capital management and the firms' performance. For the first finding which was discussed is the relationship between the working capital components (ACP, APP, ICP and CCC) and the firms' performance. ACP was found significantly positive on the ROA and ROE in the industrial products sector, while ACP is negatively related to the ROA and ROE in the plantations, properties and trading and services sectors. For the industrial products sector, the positive relationship between the ACP and the performance was shown as measured by the ROA and ROE and indicates that a longer time taken to collect the debts from the customers will increase the firms' profitability due to the greater access of the products. The negative relationship between the ACP and the firms' profitability which is found in three sectors indicates that these sectors are more profitable if the firms speed up the process of collecting the account receivables as it can avoid bad debts. The ACP and the Tobin's Q is positively related in the construction sector while, negatively related in the consumer products, plantations and trading and services sectors. The shareholders' in the construction sector will give more value if the firms grant the customers with a longer credit policy.

APP is found positively related with the ROA and the ROE in the consumer products and the industrial products sectors. This indicates that both sectors will be more profitable if they delay their payments for the payables. On the other hand, APP is significantly negative with the ROA and the ROE in the plantations and the properties sectors. This indicates that these sectors are managing their working capital efficiently by reducing the cost in the interest payment in the payables to get a higher profit. The APP and the Tobin's Q is found negatively related in the industrial products, plantations and trading and services sectors, while it is positively related in the construction and the properties sectors. The positive relationship indicates that the shareholders' value in the construction and the properties sectors will increase when the firms pay their creditors at a delayed date. However, the shareholders' value in the industrial products, plantations and trading and services sectors will increase if the firms pay their creditors' on time.

The negative relationship is found between the ICP and the firms' profitability for the industrial products, plantations, properties and trading and services sectors indicates that these sectors are maintaining the low cost in storage and the insurance to obtain a higher profit. However, the ICP and the ROA is found positively related in the consumer products sector which indicates that this sectors will get more profit if the firms have higher inventory turnover period. The availability of stocks in delivering the customers' necessity will reduce the ordering cost of a firm and therefore will increase the firms' profitability in the consumer products sector. The ICP and the Tobin's Q is found to be positively related in the properties sector but negatively related in the consumer products, industrial products, plantations, and trading and

services sectors. Contrasted from the firms' profitability, the shareholders' in the properties sector are giving more value if the firms has longer conversion period in the inventory.

The CCC and the firms' profitability are negatively significant in the industrial products, plantations, properties and trading and services sectors. This indicates that most of the firms in these sectors are getting a higher profit when they reduce the period in converting the sales to cash. However, the CCC and the firms' value show both positive and negative relationship. The CCC and the Tobin's Q are negatively related in the consumer products, plantations and also in the trading and services sectors. While, positive relationship between the CCC and the Tobin's Q are found in the construction and the properties sectors. Shareholders' are giving more value if firms in the construction and the properties sectors have longer cash conversion cycle, delaying the debt collection, delaying the payments to the creditors and have a long inventory turnover. This can be found in the construction sector whereby the firms' value will be increased when the firm have longer receivable, payable and inventory turnover.

The second findings discussed the aggressive working capital management which comprises of the aggressive investment policy and the aggressive financing policy. Aggressive investment policy and the firms' performance (ROA, ROE and Tobin's Q) are negatively related in the construction, consumer products, industrial products, and plantations sectors. On the other hand, the aggressive financing policy and the firms' performance are negatively related which is found in the construction, consumer products and industrial products sectors. However, the plantations sector shows a

positive relationship between the AFP and the firms' performance. From the study conducted, four sectors show significant relationship between the working capital policies and the firms' performance which are the construction, consumer products, industrial products and plantations sectors. This indicates that the firms' performance will be affected by using aggressive working capital policies in these four sectors. However, only three sectors show that the aggressive working policies will reduce the firms' profitability. The plantations show that aggressive investment policy will reduce the firms' profitability, but the aggressive financing policy will increase their firms' profitability.

A precise study is done to estimate the relationship between the working capital policies and the firms' performance. The study has found that the working capital policies will affect the firms' performance except for the plantation sector. The AIP is positively related to the firms' performance in the properties sector, while negatively related in the consumer products and the industrial products sectors. The AFP and the firms' performance are positively related in the construction sector, while negatively related in the industrial products and also in the trading and services sectors. This study also found that the CIP and the CFP showed a negative relationship with the firms' performance. The CIP and the firms' performance are negatively related in the construction, industrial products and trading and services. In addition, the CFP and the firms' performance are negatively related in the trading and services sector.

Overall, most of the sectors show negative relationship between the working capital management and the firms' performance. This relationship was proven by using the working capital components and the working capital

124

policies. A firm which have a shorter period in collecting their debts, pay and inventory cycle will increase the firms' profitability and value. While, firms with the conservative working capital policies which holds a higher current assets and a lower current liabilities tend to increase the firms' performance compared to the firms which applied the aggressive working capital policies.

5.2   Limitation of study

There are several limitations in this study. The first limitation is the time period. This study is conducted within three months. Due to the time limitation, this study could not observed the working capital practices in all Malaysian listed firms. The second limitation is the small sample size. This study is only limited to six sectors which are the construction, consumer products, industrial products, plantations, properties and also the trading and services. Some of the sectors that are not included in the sample are technologies, hotel, mining and also finance sectors. However, the hotel and mining is excluded due to the small sample size, that is only 4 listed firms in the hotel sector and one listed firm in the mining sector. This study only considers about 20% of full sample from each sector. The results will be more significant if a larger sample is used.

5.3   Recommendation

Working capital is an interesting area since it comprises of short term financing and investment decision. Due to the lack of findings in several sectors listed in Bursa Malaysia, future research should be done by focusing on

the other sectors which are the technology and the finance sectors. The technology sector can be done by increasing the percentage taking in overall sample. The finance sector would give different results because of the different accounting treatment. Moreover, the future research should use a larger sample size to get more significant results.

References

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. *International Journal of Managerial Finance*, 155-179.

Afza, T., & Nazir, M. S. (2007). Is it better to be aggressive or conservative in managing working capital? *Journal of Quality and Technology Management*, 11-21.

Afza, T., & Nazir, M. S. (2008). Working Capital Approaches and Firm's Returns. *Pakistan Journal of Commerce and Social Sciences*, 25-36.

Akinlo, O. O. (2012). Effect of Working Capital on Profitability of Selected Quoted Firms in Nigeria. *Global Business Review*, 367-381.

Al-Shubiri, F. N. (2011). Analysis the Relationship between Working Capital Policy and Operating Risk: An Empirical Study on Jordanian Industrial Companies. *Hebron University Research Journal*, 287-306.

Al-Shubiri, F. N. (2011). The Effect of Working Capital Practices on Risk Management: Evidence from Jordan. *Global Journal of Business Research*, 39-54.

Ariff, M., & Abu Bakar, S. Y. (1999). The Malaysian Financial Crisis: Economic Impact and Recovery Prospects. *The Developing Economies*, 417-438.

Arunkumar, O. N., & Ramanan, T. R. (2013). Working Capital Management and Profitability: A sensiivity analysis. *International Journal of Research and Development - A Management Review*, 52-58.

Azam, M., & Haider, S. I. (2011). Impact of Working Capital Management on Firms' Performance: Evidence from Non-Financial Institutions of KSE-30 index. *Interdisciplinary Journal of Contemporary Research in Business*, 481-492.

Bei, Z., & Wijewardana, W. P. (2012). Working capital policy practice: Evidence from Sri Lankan companies. *Procedia-Social and Behavioral Sciences* , 695-700.

Bellouma, M. (2011). The Impact of Working Capital Management and Profitability: The Case of Small and Medium-Sized Export Companies in Tunisia. *Management International*, 71-88.

Bhutto, N. A., Abbas, G., Rehman, M. U., & Shah, S. M. (2011). Relationship of Cash Conversion Cycle with Firm Size, Working Capital Approaches and Firm's Profitability: A Case of Pakistani Industries. *Pakistan Journal of Engineering Technology and Science*, 45-64.

Bieniasz, A., & Golas, Z. (2011). The Influence of Working Capital Management on the Food Industry Enterprises Profitability. *Contemporary Economics*, 68-81.

Bolek, M. (2013). Working Capital Management, Profitability and Risk - Analysis of Companies Listed on the Warsaw Stock Exchange. *Financial Internet Quaterly*, 1-10.

Chaklader, B., & Shrivastava, N. (2013). Relationship of Working Capital Management with Firm's Profitability during the Period of Global Slowdown: An Empirical Study of Manufacturing Firms in India . *Research Journal of Economics and Business Studies* , 41-50.

Charitou, M. S., Elfani, M., & Lois, P. (2010). The Effect of Working Capital Management on Firm's Profitability: Empirical Evidence from an Emerging Market. *Journal of Business and Economics Research*, 63-68.

Chhapra, I. U., & Naqvi, N. A. (2010). Relationship between Efficiency Level of Working Capital Management and Profitability of Firms in Textile Sector of Pakistan . *Indus Journal of Management and Social Sciences*, 30-42.

Claessens, S., Djankov, S., & Xu, L. C. (2000). Corporate Performance in the East Asian FInancial Crisis. *The World Bank Research Observer*, 23-46.

Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? *Journal of Business FInance and Accounting*, 573-587.

Ernst & Young (2014). *All Tied up India-Working Capital Management report 2014.* Ernst and Young.

Forghani, M., Shirazipour, M., & Hosseini, A. (2013). Impact of Working Capital Management on Firms Performance. *Journal of Basic and Applied Scientific Research*, 943-947.

Garcia, J. F., Martins, F. V., & Brandao, E. F. (2011). The Impact of Working Capital Management upon Companies' Profitability: Evidence from European Companies . *FEP Working Papers*, 1-35.

Garcia-Teruel, P. J., & Martinez-Solano, P. (2007). Effects of Working Capital Management on SME Profitability. *International Journal of Managerial Finance*, 164-177.

Gill, A., Biger, N., & Mathur, N. (2010). The Relationship Between Working Capital Management and Profitability: Evidence from the united States. *Business and Economics Journal*, 1-9.

Karaduman, H. A., Akbas, H. E., Ozsozgun, A., & Durer, S. (2010). Effects of working capital management on profitability: The case for selected companies in the Istanbul Stock Exchange. *International Journal of Economics and Finance Studies* , 47-54.

Kaur, H. V., & Singh, S. (2013). Managing Efficiency and Profitability Through Working Capital: an Empirical Analysis of BSE 200 Companies. *Asian Journal of Business Management*, 197-207.

Korankye, T., & Adarquah, R. S. (2013). Empirical Analysis of Working Capital Management and its Impact on the Profitability of Listed Manufacturing Firms in Ghana. *Research Journal of Financeand Accounting*, 124-131.

Levy, H. (1998). *Principles of Corporate Finance.* South-Western College Publishing.

Mansoori, E., & Muhammad, J. (2012). The effect of working capital management on firm's profitability: Evidence from Singapore. *Interdisciplinary Journal of Contemporary Research in Business*, 472-486.

McLaney, E. J. (2000). *Business Finance Theory and Practice.* Pearson Education Limited.

Mohamad, N. E., & Saad, N. M. (2010). Working Capital Management: The Effect of Market Valuation and Profitability in Malaysia. *International Journal of Business and Management*, 140-147.

Mousavi, Z., & Jari, A. (2012). The Relationship between Working Capital Management and Firm Performance: Evidence from Iran. *International Journal of Humanities and Social Science*, 141-146.

Moyer, R. C., McGuigan, J. R., & Kretlow, W. J. (2009). *Contemporary Financial Management.* South-Western Cengage Learning.

Mumtaz, A., Rehan, M., Rizwan, M., Murtaza, F., Jahanger, A., & Khan, H. A. (2013). Impact of Working Capital Management on firms' performance: Evidence from Chemical Sector listed firms in KSE-100 index . *IOSR Journal of Business and Management*, 93-100.

Napompech, K. (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms. *International Journal of Trade, Economics and FInance*, 227-232.

Nasser, A. A., Amin, J. M., & Zakaria, N. B. (2006). The relationship between the aggressive working financing method and the performance of the working capital management in Malaysian construction companies . *Institute of Research, Development & Commercialisation (IRDC), Universiti teknologi MARA*.

Nazir, M. S., & Afza, T. (2009). Impact of Aggressive Working Capital Management Policy on Firms' Profitability. *The IUP Journal of Applied Finance*, 19-30.

Nimalathasan, B. (2010). Working capital management and its impact on profitability: A study of selected listed manufacturing companies in Sri Lanka. *Information management*, 76-82.

Nzioki, P. M., Kimeli, S. K., Abudho, M. R., & Nthiwa, J. M. (2013). Management of working capital and its effect on profitability of manufacturing companies listed on Nairobi Stock Exchange (NSE), Kenya. *International Journal of Business and FInance Management Research*, 35-42.

Onwumere, J. U., Ibe, I. G., & Ugbam, O. C. (2012). The Impact of Working Capital Management on Profitability of Nigerian Firms: A Preliminary Investigation. *European Journal of Business and Management*, 192-201.

Palani, A., & Mohideen, A. P. (2012). Impact of aggressive working capital management policy on firms' profitability. *International Journal of Research in Commerce & Management*, 49-53.

Palombini, N. V., & Nakamura, W. T. (2012). Key factors in working capital management in the Brazilian market. *Revista de Administração de Empresas*, 55-69.

Panigrahi , A. K. (2013). Negative Working Capital and Profitability: An Empirical Analysis of Indian Cement Companies. *International Journal of Research*, 41-46.

Pouraghajan, A., & Emamgholipourarchi, M. (2012). Impact of Working Capital Management on Profitability and Market Evaluation: Evidence from Tehran Stock Exchange. *International Journal of Business and Social Science*, 311-318.

Rehman, M. U., & Anjum, N. (2013). Determination of the Impact of Working Capital Management on Profitability: An Empirical Study from the cement sector in Pakistan. *Asian Economic and Financial Review*, 319-332.

Sabri, T. B. (2012). Different Working Capital Policies and the Profitability of a Firm. *International Journal of Business and Management* , 50-60.

Salawu, R. O. (2006). Industry Practice and Aggressive Conservative Working Capital Policies in Nigeria. *European Journal of Scientific Research*, 294-304.

Sharma, A. K., & Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. *Global Business Review*, 159-173.

Ukaegbu, B. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. *Research in International Business and Finance*, 1-16.

Usama, M. (2012). Working Capital Management and its affect on firm's profitability and liquidity: In other food sector of (KSE) Karachi Stock Exchange. *Arabian Journal of Business and Management Review*, 62-73.

Vahid, T. K., Elham, G., Mohsen, A. K., & Mohammadreza, E. (2012). Working Capital Management and Corporate Performance: Evidence from Iranian Companies. *Procedia Social Behavioral Sciences*, 1313-1318.

Vishnani, S., & Shah, B. K. (2007). Impact of Working Capital Management Policies on Corporate Performance-An Empirical Study. *Global Business Review*, 267-281.

Vural, G., Sokmen, A. G., & Cetenak, E. H. (2012). Affects of Working Capital Management on Firms' Performance: Evidence from Turkey. *International Journal of Economics and Financial Issues*, 488-495.

Wasiuzzaman, S., & Arumugam, V. C. (2013). Determinants of Working Capital Investment: A Study of Malaysian Public Listed Firms. *Australasian Accounting Business and Finance Journal*, 49-70.

Weinraub, H. J., & Visscher, S. (1998). Industry Practice Relating to Aggressive Conservative Working Capital Policies. *Journal of Financial and Strategic Decisions*, 11-18.