THE IMPACT OF WORKING CAPITAL MANAGEMENT, DEBT AND SIZE ON SMES' PERFORMANCE: EVIDENCE FROM MALAYSIA

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ABSTRACT

The aim of this study is to provide empirical evidence on the impact of working capital management, debt and size on SMEs' performance in Malaysia focusing on the manufacturing sector. A panel data sample of 105 firms for the study was obtained from the Companies' Commission of Malaysia (CCM) for the period from 1996 to 2015. The Generalized Least Square (GLS) was used for testing the hypotheses of the study. The regression results show that accounts receivable period, inventory holding period, debt and size are significantly related to performance, whereas accounts payable period and cash conversion cycle are insignificantly related to performance. The results also showed accounts receivable period, accounts payable period and debt to have negative relationship with performance. But the remaining independent variables have positive relationship with performance. Furthermore, the findings have important implication for financial managers and policy-makers who regulate and propose mechanisms for SMEs development.

Key words: working capital management, small and medium enterprises, performance of SMEs

ABSTRAK

Tujuan kajian ini adalah untuk menyediakan bukti empirikal mengenai kesan pengurusan modal kerja, hutang dan saiz terhadap prestasi PKS di Malaysia dengan menumpukan kepada sektor pembuatan. Sampel panel data yang mengandungi 105 syarikat digunakan dalam kajian yang diperolehi daripada Suruhanjaya Syarikat Malaysia (SSM) bagi tempoh 1996 hingga 2015. *Generalized Least Square* (GLS) telah digunakan untuk menguji hipotesis kajian. Keputusan regresi menunjukkan bahawa tempoh akaun penerimaan, tempoh memegang inventori, hutang dan saiz adalah signifikan dengan prestasi, manakala tempoh akaun pembayaran dan penukaran kitaran wang tunai adalah tidak signifikan dengan prestasi. Keputusan juga menunjukkan tempoh akaun penerimaan, tempoh akaun pembayaran dan hutang mempunyai hubungan negatif dengan prestasi. Tetapi pembolehubah bebas yang selebihnya mempunyai hubungan positif dengan prestasi. Tambahan pula, hasil kajian memberi implikasi penting bagi pengurus kewangan dan dasar yang mengawal selia dan mencadangkan mekanisme untuk pembangunan PKS.

Kata kunci: pengurusan modal kerja, industri kecil dan sederhana, prestasi PKS

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LIST OF ACRONYMS AND ABBREVIATIONS

WCM - working capital management

SMEs - small and medium enterprises

ARP - accounts receivable period

APP - accounts payable period

IHP - inventory holding period

CCC - cash conversion cycle

CHAPTER ONE

Background of the Study

1.0 Introduction

The performance of Small and Medium Enterprises (SMEs) is defined as their ability to create employment and enhance economic growth by establishing business, survival and sustainability (Sandberg, Vinberg & Pan, 2002). The SMEs performance could also have an effect on major stakeholders in the sector such as financial creditors, trade debtors, trade creditors and company employees. Thus, the performance of SMEs has a far-reaching impact on the Malaysian economy directly or indirectly. SMEs Performance is a key to the transformation of Malaysia into a high-income and knowledge-based economy by their contribution to the nation's Gross Domestic Product (GDP). According to Moorthy, Tan, Choo, Wei, Ping & Leon (2012) that in spite of their vital role to employment generation and economic growth, the number of Malaysian SMEs within one year period decreased from 17,157 firms in 2010 to 16,893 firms in 2011.

Previous studies documented that the deteriorating performance of SMEs resulted to high rate of business failure as a result of their inability to overcome various challenges. Reiss (2006) and Ahmad and Seet (2009) mentioned that due to poor performance of SMEs, about 50 percent failed in many nations around the globe. In the context of Malaysia, the challenges affecting SMEs performance are highlighted in the findings of SMI Development Plan 2001–2005 (SMIDEC, 2002), the UPS survey (2005) among others; and based on estimation, studies reported 60 percent failure rate of SMEs in Malaysia, (Portal Komuniti, 2006; Ahmad and Seet, 2009).

Tauringana and Afrifa, (2013) and Banos-Caballero, Garcia-Teruel and Martinez-Solano (2010) both indicated the importance of WCM to the SMEs performance. Similarly Afeef (2011), states that WCM has strong impact on the performance of SME. Demigurc-Kunt and Maksimovic (2002) and Beck, Thorsten, and Asli Demirguc-Kunt (2006) argued that dearth of financing affects SMEs growth especially external debt. Saleh and Ndubisi (2006) identified access to finance and working capital as major problems of SMEs in Malaysia. Mohammad and Saad (2010) argued that huge amount of investment in the Malaysian firms are held in their working capital. Furthermore, SMEs performance is affected by its WCM and the firm size (Uyar, 2009).

1.2 Working Capital Management (WCM)

WCM is concern with the managing of current assets and current liabilities. In general terms, the WCM refers to the efficiency in managing the components (accounts receivable, accounts payable, inventory holding and cash conversion cycle) of working capital in order to meet short term requirements (Eljelly, 2004). In this regard, the percentage of current assets and current liabilities relative to total assets and total liabilities respectively indicates managers' concern to issues on working capital.

The influence of WCM on company's liquidity and profitability make it also relevant in the field of corporate finance management theories (Nazir & Afza, 2009). The impact of WCM is imperative to all size of firms particularly the SMEs (Howorth & Westhead, 2003) due to its effects on profitability and risk (Banos-Caballero, Garcia-Teruel, & Martinez-Solano, 2010) and perhaps its value. Also, the WCM affect the liquidity and

profitability of the firm (Deloof, 2003). Moreover, besides basic decisions in financial management, effective WCM will drive a firm to respond rapidly and competently to sudden changes in market variables, like interest rates and the prices of raw materials that will enhance its performance and give the firm competitive advantages over its rivals (Appuhami, 2008).

WCM is considered by both the academics and corporate managers as the central means for the growth and profitability in small and big businesses. In general, achieving an optimal level of working capital is among the major task challenging corporate managers. Managers applied financial theories in decision making and the fundamental decision is concerning liquidity and profitability. The main goal of WCM is ensuring that a firm has the capacity to remain in operation with adequate liquidity for the settlement of maturing short term debt or any future operational costs. Consequently, this require critical decisions in managing accounts payable, accounts receivable, wieldy inventories and cash cycle.

Larsen and Lewis (2007) indicated that the primary causes of SMEs failure are problems of short-term liquidity and poor working capital strategies. Whenever a firm is becoming distress or bankrupt, banks and legal advisers becomes more concern to working capital (Ramiah, Yilang & Moosa, 2014). They further argued that banks decisions to offer or extend commercial loans depend on firm's working capital efficiency. On the other hand, legal advisers need information on working capital to conclude whether a firm is legally bankrupt.

1.3 Debt

Debt refers as the company's financial leverage from the ratio of the firm's total asset to total liabilities has remained one of the major obstacles to SMEs performance across the globe, and various governments in developed and developing nations are making attempts to provide tangible solutions to this problem through various policies and programmes as well as the establishment of an exclusively financing schemes for the SMEs sector. The performance of SMEs is often hindered by lack of access to external finance in spite of their critical role in enhancing economic growth and creating jobs (OECD, 2014). The main source of finance to SMEs that support expansion are commonly the retained earnings and bank loans; and in some instances informal creditors also contribute to the financing of SMEs (chen, 2006). As a result of higher premium, external financing is considered to be more expensive than internal financing for the SMEs, and a firm with an increasing debt ratio would give more attention to improving internal earnings through greater performance, using available working capital for profitable investment opportunities (Nazir & Afza, 2009). Therefore SMEs need to explore alternative ways to finance their operations to ensure better performance and sustainability (SMEcorps, 2014). If the firm has been operating longer-time and profitable, they can depend on their own internal financial resources, otherwise, the firm should manage its working capital effectively to be able to pay for its short-term liabilities.

1.4 Size

The size of firms among SMEs differs based on company's resources. It has been explained "that 'smallness' usually implies a weak resource base, which creates different operating conditions. These differences can be found in all types of business activities, both externally and internally" (Boter and Lundström, 2005). As a result, the impact of size to SMEs performance may vary among them. Smaller firms face financing constraints more than larger firms within the sector. Hill *et al.* (2010) suggest that firm's size has link to easy access to capital market. Accordingly, larger firms can have flexible accounts receivable and inventory policies, since they have an easy access to external debt. Also, large firms with higher sales volume needs more investments in working capital (Moussawi *et al.*, 2006); and having opportunities for better performance (Chiou *et al.*, 2006).

1.2 Malaysian Small and Medium Enterprises (SMEs)

Omer and Ismail (2009) state that there is no worldwide generally accepted definition of SMEs due to variations in industry characteristics and economic development. The National SME Development Council (NSDC) Malaysia, a meeting held in July 2013 endorsed a new SMEs definition that embodied all sectors, namely: manufacturing, services, construction, agriculture and mining & quarrying. The definition uses sales revenue and number of permanent employees as the two main guidelines in shaping the definition. In the case of manufacturing sector, "SMEs are defined as firms with sales turnover not exceeding RM50 million or number of full-time employees not exceeding

200 workers, while for the services and other sectors, SMEs are defined as firms with sales turnover not exceeding RM20 million or number of full-time employees not exceeding 75" (SME Corp. Malaysia, 2014).Under this new definition, all SMEs must register with Companies Commission of Malaysia (CCM) or other relevant bodies. Except businesses on the main board that are public listed or subsidiaries of public listed companies on the main board; Syarikat Menteri Kewangan Diperbadankan (MKDs); multinational corporations (MNCs); government-linked companies (GLCs); and State-owned enterprises (SME Corp. Malaysia, 2014).

The SMEs in Malaysia are regarded as the nation fastest growing sector of the economy. The 2011 Economic Census states that SMEs account for 97.3 percent or 645,136 of total business establishments in 2010. In this figure, the services sector has high number of SMEs' with 90 percent or 580,985 establishments, the manufacturing sector with 6 percent (37,861), others are construction sector 3 percent (19,283), agriculture and mining and quarrying sector have 1 percent (6,708) and 0.1 percent respectively (SME Corp. Malaysia, 2015). Women controlled about 19.7 percent of total SMEs mainly concentrated in the services sector of about (91.7 percent) and (6.9 percent) in the manufacturing sector. The number of women involved in the remaining sectors is small. The participation of women in the Malaysian SMEs include only enterprises in which woman is the Chief Executive Officer (CEO) holding an equity ownership of at least 10 percent or having equity of 51 percent and above.

In terms of Gross Domestic Product (GDP) growth, SME has constantly outperformed in major areas of the country's total economic growth. During the period 2010 to 2014, the average compounded annual growth rate (CAGR) of SMEs was 7.1 percent, which was

higher than the 4.9 percent CAGR of the overall economy. Consequently, the impact of SME to GDP increased from 29.6 percent in 2005 to 35.9 percent in 2014 (Department of Statistic Malaysia (DOSM), 2015; and (SME Corp. Malaysia, 2015)). In the year 2014, SMEs had contributed 65 percent and 17.8 percent of total employment and total exports respectively. The Malaysian economy growth projection of 4.5 – 5.5%, in which for SME GDP was expanded by 5.0 – 5.5% in 2015. Notwithstanding the progressive performance of SMEs in recent times, the contribution of Malaysian SMEs to the general economy remains relevant as more than 99% SMEs proportion to total business establishments in Malaysia, obviously, stimulating the success of SMEs is necessary in the nation's struggle for expanding sustainable growth. Consequently, this initiative was reflected in the national development agenda Third Industrial Master Plan (IMP3: 2006-2015). For that reason, the Government launched the SME Masterplan in 2012 in a quest to plan and reorganise the development of SMEs in line with Malaysia's vision 2020 goals to become a high-income country.

Table 1: Contribution of SMEs to Overall GDP by Key Economic Activity (percent)

Sector / Year	2010	2011	2012	2013[e]	2014[p]
Agriculture	4.3	4.3	4.1	4.0	4.5
Mining & Quarrying	0.05	0.05	0.1	0.1	0.1
Construction	0.9	0.9	1.0	1.1	2.0
Manufacturing	7.2	7.4	7.4	7.5	7.8
Services	19.6	19.9	20.0	20.5	21.1
Plus: import duties	0.2	0.3	0.3	0.3	0.4
Share SME GDP to Overall GDP	**32.2**	**32.8**	**33.0**	**33.5**	**35.9**

e: estimate
p: preliminary

Sources: Department of Statistics Malaysia (DOSM) and SME Corp. Malaysia

1.3 Problem Statement

SMEs are the catalyst for the economic growth of developed and developing nations; hence resourceful performance is paramount to their success and survival (Beck & Demirguc-Kunt, 2006). Notwithstanding the contributions of SMEs to economic growth, Reiss (2006) and Ahmad and Seet (2009) contended that due to poor performance, about 50 percent of SMEs across the globe fail within the earliest five years of their business. Moreover, Moorthy *et al.* (2012) state that the number of Malaysian SMEs reduced from 17,157 in 2010 to 16,893 in 2011. According to Ahmad and Seet (2009) the Malaysian SMEs face a number of challenges which are obstacle to better performance and survival. Although, hardly exist any reliable statistics or data on the failure rate of SMEs in Malaysia, studies have estimated 60 percent failure rate (Portal Komuniti, 2006; Ahmad & Seet, 2009). Previous literatures such as Hall (2002); Wang (2003); and Stuti (2005) have documented various obstacles that undermine the performance of SMEs in Malaysia. Muhammad *et al.* (2010) states that previous studies have identified many obstacles to SMEs performance such as external financing, working capital, financial leverage, economic condition, low productivity, human resources and managerial expertise among others.

The existing literatures on SMEs performance in relation to WCM have provided knowledge on the topic (see Afrifa, *et al.,* 2015; Padachi, 2006; Serrasqueiro & Nunes, 2008; Padachi & Howorth, 2013). The study of Afrifa *et al.,* (2015) emphasized on the importance of WCM to the firms' performance and that it continued to be their major concern. Tauringana and Afrifa (2013) argued that their performance is still discouraging as a result of incompetency in managing the components of WCM. It was evidenced that

SMEs are poor at managing their working capital (Kieschnick, Laplante & Moussawi, 2006). Similarly, Pansiri and Temtime (2008) stated that the success or failure of SMEs is completely affected by the management competency.

Insufficient capital and access to external debt also influence the performance of SMEs. The studies conducted in developed economies of United State and the United Kingdom has revealed that weak financial management as one of the major problems among SMEs (Afrifa *et al.,* 2015; Lazaridis & Tryfonidis, 2006). As a result of insufficient funds, SMEs in US use trade credit financing when they have run out of capital (Danielson & Scott, 2000). Likewise, Cuñat (2007) contended that "trade credit represents about 41percent of the total debt and about half the short term debt in UK medium sized firms". Whited (1992) argued that company size influences the performance of SMEs. Company that has abundant resources could have better advantage in accessing external debt than smaller companies due to its limited resources (Faulkender & Wang, 2006).

A review of the existing literatures on Malaysian SMEs reveals that there is a research gap that examines issues affecting SMEs performance in Malaysia in connection to their WCM, debt and size. Though, many studies were conducted on the SMEs in developed and developing nations, there findings may not be generalized to all SMEs due to differences in regulations, business and economic environment among nations. However, in the context of Malaysia, based on information available, the previous studies on the effect of WCM on SMEs performance is only that of Saarani and Shahadan, (2012) that studies on the best awards winning SMEs (Enterprise 50). Whereas Mohamad and Saad (2010); Mohammed and Elias (2013); Wasiuzzaman *et al. (*2013); Wasiuzzaman (2014); Wasiuzzaman (2015); and Zariyawati *et al.* (2009) studied on large listed firms.

Given the context discussed above, this research is aimed to investigate the impact of WCM, debt and size on SMEs performance in Malaysia from 1996 to 2015.

1.6 Research Questions

(1) Do the components of WCM affect performance of Malaysia SMEs?

(2) Do debts affect performance of Malaysia SMEs?

(3) Do firm sizes affects performance of Malaysia SMEs?

1.7 Research Objectives

The broad objective of this research is to appraise the impact of the components of WCM, debt and size on firms' performance in the manufacturing sector of Malaysian SMEs. The specific objectives will be;

(1) To investigate the impact of WCM components on SMEs' performance in Malaysia.

(2) To examine the impact of debt on SMEs' performance in Malaysia.

(3) To examine the impact of size on SMEs' performance in Malaysia.

1.8 Scope of the Study

This study is limited to 105 firms of the manufacturing sector of SMEs' in Malaysia. The study focused on the variables of working capital management components (accounts receivable period; inventory holding period; accounts payable period and cash conversion cycle), debt and size in order to examine their impacts on the SMEs' performance.

1.9 Significance of study

This study will be valuable in many aspects. Firstly, adding to the existing literature in the field of WCM and profitability. Understanding the effects of working capital components, debt and size on firm's performance would assist the company's management toward achieving an optimum balance between those components in working capital in order to maximize the shareholders wealth. Secondly, due to the slow growth in the global economy, manufacturing and non-manufacturing firms could use the findings of the research to sketch its strategic plans to improve their financial performance. Lastly the study is equally important to regulators and policy makers for proper planning, monitoring and controlling of SME business.

1.10 Organisation of the Study

This study is organised into five chapters. The background to the study, review of the performance of SMEs in Malaysia covers in Chapter one. The chapter also contains the problems statement, objectives of the study, research questions, and significance of the

study. Chapter two focuses on the literature review summarising the fundamental theories and empirical suggestions on working capital management relating to SMEs and other related evidences. Chapter three discusses the methodology to be applied to ascertain the effect of working capital components on SMEs profitability, the data collection process and the hypotheses. Chapter four presents the empirical results and findings of the various statistical analyses of the study. And finally, chapter five summarizes the analyses gives the concluding remarks and proposals for future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Based on overview of corporate finance literature, it was concluded that there is no strong and generally accepted theory explaining the working capital management (Nakamura & Palombini, 2012). Conceivably, the Pecking Order Theory is the closet relevant theory associated to WCM established by Myers and Majluf (1984).

2.1 Pecking Order Theory

The Pecking Order Theory (POT) state that internal finance is more preferred to firms than the external finance and where external financing became necessary, they choose debt than equity. The pecking order theory arises due to information asymmetry. Because corporate managers often possess certain information on the well-being of their firms which outside investors do not obtain. Information asymmetric and transaction costs were the major challenges faced by SMEs in accessing external funds. Information asymmetry due to SMEs' absence of accounting records, poor business plans or financial statements creates the problems for moneylenders and potential investors in assess the creditworthiness of SMEs; the transaction costs makes SME financing low or non-profitable investment due to the small amounts of lending (Beck & Demirguc-Kunt, 2006).

Lack of financial resources has since been identified as the greatest challenge for SMEs and this is the reason for their narrow potential growth (Abor & Quartey, 2010). SMEs owners' preferred to be a sole proprietor rather than disburse part of the equity to outsiders which could possibly increase capital for investment and improve performance. Consequently, they preferred to use little of their financial resources rather than seek external financing. Thus, lack of capital generally lead to business failure, particularly SMEs capital investments are hardly financed through long-term debt because they lack records of financial report. For this reason, the pecking order theory was generally attributed to SMEs due to their preferences to using personal finance. The theory envisages a hierarchical order in a company financing policy. It begins with finance sources that are least affected by the transaction cost, at the same time, less risk, and so on. Therefore, the most preferred financing is retained earnings, and then followed by short term debt due to its low risk and then long term debt been having high risk, and the last financing preferences is issuing new capital through equity (Frank & Goyal, 2003). This theory is normally practice following a short term changes, that is, the link between changes in the company's level of debt and the need for more funds for investment. Based on this assumption, a change in the debt proportion is not driven by the need to attain a specific target of debt, but is influence by the necessity of external financing for investment. Meaning that, profitable investment may exist while internal funds are insufficient.

2.2 Working Capital Management and Performance

According to Ramiah *et al.* (2014) the studies previously conducted on working capital management revolve about two major issues:

(1) The determinants of WCM (Abbadi & Abbadi, 2013; Mansoori & Muhammad, 2012; Saraani & Shahadan, 2012); and

(2) The relationship between WCM and performance (Afrifa, *et al.,* 2015; Padachi, 2006; Serrasqueiro & Nunes, 2008; Padachi & Howorth; Banos-Caballero *et al.*, 2010).

The study of Afrifa (2013) express that the level of financial manager's experience in handling WCM decisions significantly enhances performance. Chowdhury and Amin (2007) studied the Pharmaceutical companies in Bangladesh and found a positive association between WCM with firms' performance. Gill *et al.* (2010) studied on the association between WCM and profitability using cross-sectional method of regression analysis on a listed firm sample of 88 American manufacturing industries on the New York Stock Exchange (NYSE) from 2005 to 2007. They found inventory holding period (IHP) and cash conversion cycle (CCC) to be positively related to profitability, while accounts receivable period (ARP) and account payable period (APP) were found to be significant and negatively associated to profitability. Again, they suggest that the number of days for accounts receivable should be reduce so that managers can maximize shareholders' value. Also state that based on the findings the higher the CCC, the higher the company's profitability.

Falope and Ajilore (2009) using panel data regression on a sample of 50 listed companies from 1996 to 2005, studied the relationship between WCM and profitability. They use Return on Assets (ROA) proxy for profitability, and the result shows a negative relationship between ROA with IHP, ARP and CCC. They interpreted the negative coefficient of the IHP to mean that as shorter inventory is tight; the higher amount of cash available invested in working capital, resulting to higher profitability. The relationship between ARP and profitability, meaning that restrictive/rigid credit policy will improve company's profitability. Again the negative coefficient of CCC is interpreted that minimizing CCC enhances companies' profitability. But, a positive relationship between APP and profitability was revealed. And interpret the result that the longer the period firm delays in paying trade creditors will provide higher amount of working capital reserves and can be used for investment purpose in order to increase profitability.

Lazaridis and Tryfonidis (2006) using a sample of 131 listed companies for a period of four years from 2001 to 2004 employing a pooled regression analysis. There result shows a negative and insignificant relationship between IHP and profitability. ARP has a negative relationship with profitability, and the result is interpreted that managers can increase profitability of the company by reducing the days in trade receivables. Again, they suggest that less profitable companies can take advantage of the negative relationship between APP and profitability in increasing profitability, that is, the grace of time given by company's suppliers to settle bills. On the negative coefficient of the CCC, they maintained that a shorter CCC leads to higher profits.

The empirical study of Raheman and Nasr (2007) using a six years period from 1999 to 2004 on a sample of 94 Pakistani listed firms, show a negative relationship between all

the WCM components and profitability of the firms. They also found that company size has a positive relationship with profitability, while debt and profitability has a significant negative relationship. Similarly, Padachi (2006) studied the impact of WCM on firms' performance on a sample of 58 manufacturing SMEs in Mauritia for a period of six years from 1998 to 2003. Using the dependent variable - return on asset as a measure of profitability, he asserted that high investment in inventories and accounts receivable are related with lower profitability. Equally, the study of Padachi, *et al.* (2010) on a sample of 101 manufacturing SMEs in Mauritia for a six year period covering the accounting year 1998 to 2003, results from the regression analysis revealed that high inventories and accounts receivable resulted to lower profitability.

Deloof (2003) studied on a sample of 1,009 large non-financial firms in Belgium for the period from 1992 to 1996, using Fixed Effect (FE) and Ordinary Least Square (OLS), the results shows that all the components of WCM are found to have significant relationship with profitability. He used gross operating income as a proxy of profitability, while the WCM is measured by CCC. He also found that gross operating income has a significantly negative relationship with the inventories, accounts receivable, and accounts payable of Belgian firms. He concluded that managers can improve company's profitability by reducing inventory period. The interpretations on the negative coefficient of other variables that accounts receivable means customers need extra time to assess products quality which they bought from the companies although causes lower profitability, while the APP meaning that less profitable companies prolong longer days before paying their suppliers.

Furthermore, a study by Nobanee and Alhajjar (2009) on a panel data sample of 2123 Japanese non-financial companies listed on the Tokyo Stock Exchange from 1990 to 2004. Their result shows a negative relation between profitability and all the components of WCM apart from the APP which is positive. Also state that manager increases the firm's profitability by reducing the IHP and as well shortening CCC as equally suggested by Deloof (2003). They also interpreted the positive link between APP and ROI to mean that where a company delays longer to pay for their suppliers, it will have a good opportunity for investing available cash and consequently higher profitability.

The study of Garcia-Teruel and Martinez-Solano (2007) on a data sample of 8872 SMEs from 1996 to 2002, using ROA as a measurement of profitability, the result shows a statistically significant negative relationship between ARP, APP, IHP and CCC and the firm's profitability. They argued that company's profitability can be increase by shortening days in IHP, days customers take to pay the company and the days the company pays its suppliers. Mohammad and Sa'ad (2010) studied the effect of WCM on the performance of Malaysian large companies using data of 172 listed companies from 2003 to 2007. Profitability is used as a measurement of corporate performance. Their result indicates that the variables are negative and significantly related to performance of the companies.

Zariyawati *et al.* (2009) investigated the corporate performance using a panel data of 1628 listed companies in Bursa Malaysia consisting of six different economic sectors for the period from 1996 to 2006. The result shows a strong negative and significant relationship between CCC and firm's profitability. The results suggest that shortening

CCC results to increasing profitability. Therefore, in an effort to maximize shareholder's value, corporate managers should derive strategies to reduce CCC to an optimal level.

Subsequently, Wasiuzzaman (2015) using a sample of 160 from 2005 to 2010 large manufacturing firms in Malaysia, investigated the impact of WCM on the profitability and uses the ordinary least squares (OLS) regression technique. His results presented that components WCM have a negative impact on profitability with the exception of the APP having positive relationship with profitability. Also, Sharma and Kumar (2011) using a sample of 263 non-financial listed companies in India from 2002 to 2008, OLS multiple regression is used to analyse the data. They found WCM components and firm profitability to be positively related, but CCC and ROA were statistically insignificant. The findings also show that ARP and APP are positive and negative related to profitability respectively. They interpret the CCC coefficient and suggest that increasing CCC by the Indian firms can increase profitability.

Samiloglu and Demirgunes (2008) studied the impact of WCM on firms' profitability using listed companies for the period from 1998–2007. Their findings show that ARP, IHP and leverage negatively affect firms' profitability; whereas sales growth affects profitability positively. Mathuva (2010) the results from his study indicates that financial leverage has a negative relationship with profitability, but a positive association was suggested between company size, company age and profitability. Padachi (2006) found company size; working capital and gross working capital efficiency to be positively related with performance. On the other hand, debt and short-term financing indicates a negative relationship with performance. Mohamad and Saad (2010) found a positive relation between debt with profitability.

2.3 Components of Working Capital Management

Achieving optimum working capital requires efficient management of its components. Nevertheless, the management of each component comes with its costs and benefits. Therefore, the relationship between WCM, debt and size with firms' performance are discussed below.

2.3.1 Accounts Receivable Period (ARP)

The ARP is the average number of days in which the firm is able to collect payment from customers arising from credit sales. The main objective of ARP is to manage the time period between credit sales provided to customers and the time when payment is receive. The ARP influences the firm's decisions on credit policy due to the competitive nature of the present business environment which forced companies to give credit sales to customers (Brigham & Daves, 2004). Even though, the objective for complying with credit sales is to increase sales but this can lead to potentially loss arising from bad debts. Although, a rigid credit sales policy reduces possibility of bad debt, but it causes declining sales (Wasiuzzaman & Arumugam, 2013). A positive association between ARP and profitability was found by Nobanee (2009); Raheman *et al.* (2010); Abuzayed (2012). Whereas many studies have reported negative relationship between ARP and profitability ((see Raheman *et al.* (2007); Mathuva (2010); Falope & Ajilore (2009); Lazaridis & Tyrfonidis (2006); Sen & Oruc, (2009); Garcia-Teruel & Martinez-Solano, 2007; Deloof, 2003; Gill, *et, al.,* 2010; and Padachi (2006)). The negative association between ARP and profitability was interpret that the longer the number of days the

company takes to collect debtors sales outstanding the shorter the profitability (Falope & Ajilore, 2009; Deloof, 2003). According to Deloof (2003) that the negative relationship could be due the time customers take in assessing the products quality purchase from the company as such declining profit. Thus reducing the ARP will improve the firm's performance.

2.3.2 Accounts Payable Period (APP)

APP signifies the average number of days in which the company is expected to pay suppliers whose invoices are already process but yet to make payment. Many large and small firms usually regard the amounts of money outstanding to trade creditors as a source of free short-term credit. The higher the amount held in APP, the higher the total sum of money use by the firm in its operations (Falope & Ajilore, 2009). Trade credit period give rise to reduction in transaction cost, thus increasing company's performance. As argued by (Pike and Cheng, 2001) that the APP increases company's performance with regards to using the funds to overcome financial difficulties. Garcia-Teruel and Martinez-Solano (2010) states that APP is the most common sources of short-term financing, companies use it to finance a substantial percentage of their current assets. Accordingly, as the company size increase it causes higher performance in APP. As mentioned by Falope and Ajilore (2009) that small firms highly depend on trade credit. A positive association between APP and profitability was found by Raheman *et al.* (2010); Gill, *et, al.,* 2010; Sen & Oruc, (2009); Falope & Ajilore (2009); Mathuva (2010);Abuzayed (2012). Whereas studies that reported negative relationship between

APP and profitability are Raheman *et al.* (2007); Nobanee (2009); Lazaridis & Tyrfonidis (2006); Deloof, 2003; and Padachi (2006). The negative association between APP and profitability means that the longer the company takes to pay its suppliers the shorter the profitability and that firms with lower profitability takes longer period before they pay their bills to creditors (Deloof, 2003). Whereas, for the positive relationship, the more the firm stays longer to pay trade creditors the higher the amount of cash flow available for use and increasing profit performance (Falope & Ajilore, 2009).

2.3.3 Inventory Holding Period (IHP)

The IHP represents the amount of stock held by the firm within a period of time. IHP is the period of time through which a company converts materials into finished goods available for sale. Inventories consist of the stocks of raw materials, work in progress and finished goods. Mathuva (2010) specifies inventory as the second largest asset of a commonly manufacturing firm. The inventory holding period is described as the period taken to transform inventory into sales. The main objective of inventory management is to lower the cost of inventory holding devoid of any interruption in the production processes (Falope & Ajilore, 2009). Management must maintain an optimum inventory in order to meet customers demand and to save unnecessary inventory holding costs (Afrifa et al, 2015). Inventory management efficiency is by making sure that there are enough inventories for smooth operations while ordering and carrying costs are put to the possible minimum amount (Brigham & Daves, 2004). IHP helps managers to manage the

risk of 'stock-outs' and seasonal sales which causes increasing demands from customers, and as well reduce the ordering and carrying costs.

The studies of Raheman *et al.* (2007); Raheman *et al.* (2010); Deloof, 2003; Lazaridis & Tyrfonidis (2006); Falope & Ajilore (2009); and Sen & Oruc, (2009) found a negative link between IHP and profitability. But the studies of by Gill, *et, al.* (2010); Nobanee (2009); and Padachi (2006); Mathuva (2010) and Abuzayed (2012) found a positive link between IHP and profitability. The negative coefficient indicates that increasing of number of days the company takes to sell inventories reduces profitability Falope & Ajilore (2009) and vice versa.

2.3.4 Cash Conversion Cycle (CCC)

The CCC is used to measure the WCM efficiency as widely used in many studies (Deloof, 2003). The CCC is a cash flow period that measures the time it takes for a company to convert inventory into sales and back into cash Falope and Ajilore (2009). In other words, the CCC measures the period that cash is tied up in inventory before the inventory is sold and cash collection from customers. A company with short CCC can to improve performance because the company does not over-rely on external finance (Autukaite & Molay, 2011). Worth mentioning that, managers should shorten the CCC to generate more profit for the company.

Most of the existing studies found a negative association between CCC and profitability (see Raheman *et al.* (2007); Raheman *et al.* (2010); Lazaridis & Tyrfonidis (2006); Deloof, 2003; Sen & Oruc, (2009); Mathuva (2010) Abuzayed (2012); Zariyawati *et al.*

(2009); Samiloglu & Demirgunes (2008); Falope & Ajilore (2009); Garcia-Teruel & Martinez-Solano (2007) and Nobanee *et al.* (2009). While the studies that found positive association between CCC and profitability are Gill et al. (2010); Nobanee (2009) and Afeef (2011). The relationship of the negative coefficient reveals that a shorter CCC would increase the performance of a more profitability company Falope & Ajilore (2009). The management of WCM would have a major impact on the firm's performance (Deloof, 2003).

2.4 Debt

Small firms in developed and developing economies are constraint to accessing external funding which undermine their performance (Galindo & Schiantarelli, 2003; Beck & Demirguc-Kunt, 2006). Firm that maintain high leverage will have a higher cost of finances invested in CCC (Chiou *et al.*, 2006), this is due to the higher risk premium. Chiou *et al.* (2006) asserted that measurement of WCM reduces when there is an increase in the firms leverage as empirically evidence. Thus, a negative relationship is expected between leverage and WCM. Raheman et. al., (2010) suggest that firms in the manufacturing sector generally would enhance their profitability if they use medium term financing rather than short term financing. Their findings revealed a negative significant relationship between debt and profitability and interpret that an increase in debt causes reduction in the profitability. Other findings that support a significant negative relation of debt and profitability include Deloof (2003); Gill et al. (2010); Lazaridis and Tryfonidis (2006); Mathuva (2010); Zariyawati et al (2009); Garcia-Teruel and Martinez-Solano

(2007); Dong and Su (2010). On the other hand a significant positive relationship has been established between debt and profitability such as Falope and Ajilore (2009); Napompech (2012); Afeef (2011); Abuzayed (2012); Mohamad and Saad (2010).

2.5 Size

Company size is another variable that can affects company's profitability; Chiou *et al.* (2006) argued that the requirement of working capital increases with the firm's size. Zappa and McMahon (2002) indicate that when SMEs increases in size, then they became more dependent on short-term financing. Furthermore, based on the pecking order and trade-off theories, small firms have a higher chance of bankruptcy as a result of scarce resources, thus affecting the firm's trade credit policies. Accordingly, Niskanen and Niskanen (2006) argued that a firm which has easy access to external financing provides larger trade credit. Hence, firm size affects the firm's trade credit policies. According to empirical evidences, a positive relationship between size and profitability was found in the studies of Kieschnich *et al.* (2006); Stephen and Elvis (2011); Deloof (2003); Gill et al. (2010); Mathuva (2010); Lazaridis and Tryfonidis (2006); Zariyawati et al (2009); Garcia-Teruel and Martinez-Solano (2007). While for the negative relationship of size and profitability was reported in the study of Afeef (2011). The relationship between size and profitability was found to be insignificant (Samiloglu & Demirgunes, 2008).

Chapter Summary

Based on the findings stated above, it is clear that the results between WCM and firms' profitability are inconsistent in both developed and emerging economies. The results from these studies are varied across countries due to the difference of the samples, methodology and also the variables used. As such, intent of this study is to fill the paucity in the literature, in view of the issues highlighted in the problem statement. To the researcher's best knowledge, that hardly exist any study on the impact of WCM, debt and size on performance of SMEs in the Malaysian environment focusing on manufacturing sector. Furthermore, the issues, findings and suggestions from the above previous empirical studies conducted by various researchers on working capital management on different sectors, environment, and perspectives, could assist in developing the methodology for this research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The primary aim of this study is to investigate the impact of WCM, debt and size on the performance of Malaysian SMEs. This chapter presents the steps taken to facilitate in achieving the research objectives. These steps include research design, research framework, hypothesis development, data collection and sampling procedure, data analysis and techniques. The descriptive statistics in the study describe the features of the data. The objective of descriptive statistics is merely to summarise a data set rather than being used to test the hypothesis. Finally, quantitative techniques were also explained for this study.

3.1 Research Framework

The research framework illustrated in Figure 3.1 focuses on the impact of WCM, debt and size on performance of Malaysian SMEs. The framework is designed based on the review of related literatures and research questions. SMEs performance which is measured by return on assets (ROA) and return on equity (ROE) is the dependent variable, while WCM, debt and size are the independent variables.

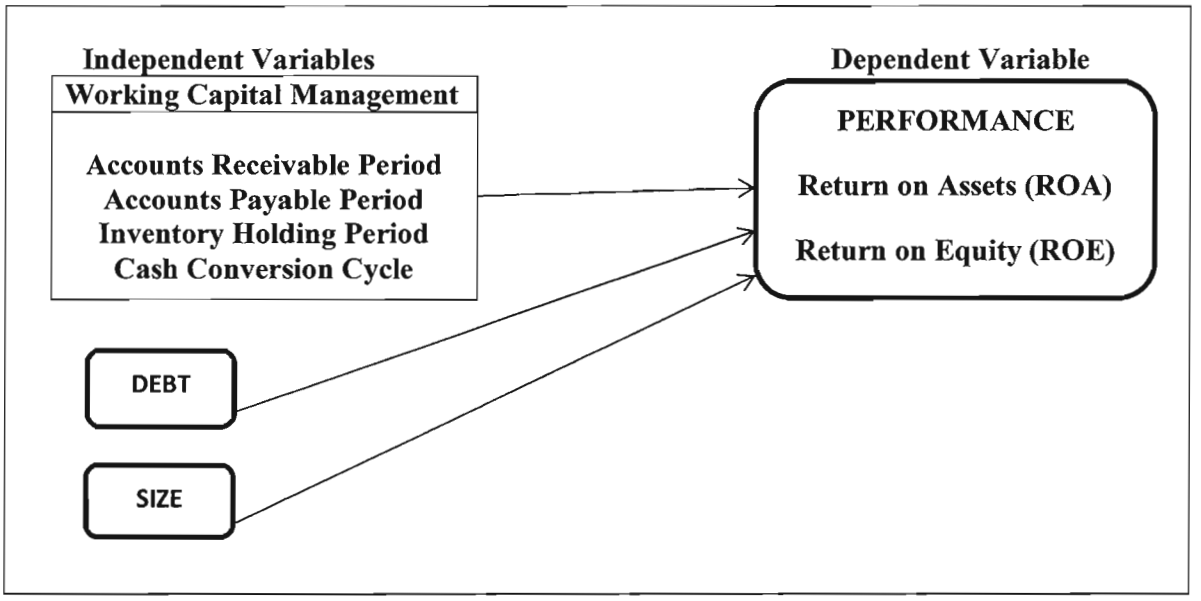

Figure 3.1: Research Framework

3.2 Variables Definition and Measurement

As shown in the research framework, the variables involved in the study consists of two measured of dependent variables and three independent variables.

3.2.1 Dependent Variable

The dependent variable used for this study is SMEs performance; proxy by ROA & ROE as used in the study of Zariyawati *et. al.* (2009); Abuzayed (2012). Again performance assesses the efficiency of transforming equipments and current assets into profit (Kamal & Zulkifli, 2004). Return on Assets (ROA) and return on equity (ROE) are proxy of performance as they were extensively used in many existing studies such as Uyar (2009); Sen and Oruc (2009); Falope and Ajilore (2009); Mohamad and Saad (2010) and that

they are the most important measurement of profitability since it indicates the real financial conditions of the firm. The ROA is measured as net income divided by total assets. The ROA is a better measurement of profitability because it relates the profitability of the company to asset base (Padachi, 2007). While ROE is measured as a percentage of net income returned for the shareholders' equity, and is calculated as net income divided by shareholders equity.

3.2.2 Independent Variables

The independent variables used for this study are WCM, debt and size in order to examine their impact on SMEs performance.

3.2.2.1 Working Capital Management

The WCM consist of the following components accounts receivable period (ARP), accounts payable period (APP), inventory holding period (IHP) and cash conversion cycle (CCC).

The accounts receivables period refers to the number of days in which a company takes to collect cash from customers on credit sales. Companies seek to achieve an optimum accounts receivable period in order to improve profitability. The period between the credit sales and payment from customers is very essential to the firm's performance. In this study, the accounts receivable period is measured as accounts receivable divided by net sales multiply by 365 days

Accounts payable period refers to the number of days in which the company delayed to pay its trade creditors. The accounts payable provides short term funds for the company and leads to reduction in transaction cost arising from external financing, thus increasing company's profitability. Subramanyam (2009) states that large portion of companies current assets are mostly finance through its current liabilities such as accounts payable period. In this study, the accounts payable period is measured as accounts payable divided by net sales multiply by 365 days.

The inventory holding period is essentially the period of time through which companies invest cash for materials and converts the materials into sale. The objective of inventory management is to lower the cost of inventory holding period without any interruption in the production processes. An inventory holding consists of raw materials, work in progress and finished goods. The IHP is measured in this study is measured as inventories divided by cost of goods sold multiply by 365 days.

The CCC is a cash flow that measures the time company takes to convert inventories and into cash. Alternatively, the CCC measures the period cash is tied up in inventories, sales and cash collection from trade debtors till the time when the suppliers are paid. In this study, the CCC is measured as IHP plus ARP minus APP.

3.2.2.2 Debt

SMEs uses less long-term financing despite the financial constraints facing the company based on the Pecking Order Hypothesis (POH). External financing is expensive than internal financing, company with high debt ratio give more attention to its working

capital which was held in the operating cycle, and investment in viable opportunities (Nazir & Afza, 2009). Debt is used in this study in order to examine its impact on the firms performance weather Malaysian SMEs uses more external financing than internal financing. In this study, debt is measured as Total liabilities divided by total assets.

3.2.2.3 Size

Size is regarded as one of the important variable to explain the profitability of a company (Serrasqueiro & Nunes, 2008). The ability of larger SMEs to expand into different strategic commercial areas increases profitability (Yang & Chen 2009) and this make them to become less susceptible to failure. Beaver and Prince (2004) argued that interms of innovation capacity, SMEs seems to be more opportune over larger businesses because SMEs have informal structure as such they could quickly respond to customers' requirements, hence increase its performance. Serrasqueiro and Nunes (2008) suggest that based on findings of previous studies, a positive or negative relationship can be found between company size and profitability. Size is measured as Natural log of sales.

Table 3.1 Summary of the variables and there measurement

Variables	Measurement	Source
Dependent Variables		
Return on Assets (ROA)	Net income / total assets	Samiloglu and Demirdunes(2008); Afeef (2011); Padachi (2006); Pais and Gama (2015); Falope and Ajilore (2009); Mohammad and Sa'ad (2010)
Return on Equity (ROE)	Net income / total equity	Lyroudi and Lazaridis (2000); Uyar (2009);Hong et al. (2011)
Independent Variables		
Accounts receivable period (ARP)	(Accounts receivable/net sales) x 365	Samiloglu & Demirgunes (2008); Garcia et al. (2007); Falope and Ajilore (2009)
Accounts payables period (APP)	(Accounts payable/net sales) x 365	Samiloglu & Demirgunes (2008); Garcia et al. (2007); Falope and Ajilore (2009)
Inventory holding period (IHP)	(Inventory/cost of goods sold) x 365	Samiloglu & Demirgunes (2008); Garcia et al. (2007); Falope and Ajilore (2009)
Cash conversion cycle (CCC)	IHP + ARP – APP	Samiloglu & Demirgunes (2008); Garcia et al. (2007); Falope and Ajilore (2009)
Debt	Total liabilities/total assets	Raheman & Nasr (2007); Shin and Soenen (1998); Lazaridis and Tryfonidis (2006); Falope and Ajilore (2009)
Size	Log N (sales)	Padachi et al. (2010); Dong and Su (2010); Deloof (2003); Raheman and Nasr (2007); Falope and Ajilore (2009)

3.3 Data Source, Population and Sampling

The study uses quantitative data extracted from annual financial reports of companies in the manufacturing sector of SMEs in Malaysia. The data was collected from the

Company Commission of Malaysia (CCM) otherwise referred to as Suruhanjaya Syarikat Malaysia (SSM) serving as a center for corporate information, regulation and development of Malaysian companies. The data contained financial information of 105 SMEs and the number of unbalanced panel data observations is 638 firms over the period of twenty years from 1996 to 2015. In order to arrive at the sample size, the financial statements of the companies are scrutinized to exclude firms with negative values in their current assets and current liabilities components. The reason for specifically choosing this period is because twenty years data is consider enough to see changes in the SMEs' performance.

3.4 Hypothesis Development

Given the empirical evidences on the WCM, the hypotheses of this study are developed based on the research framework.

3.4.1 Independent Variables

The independent variables of this study which are ARP, APP, IHP, CCC, debt and size are discussed in order to develop the hypotheses.

Accounts Receivable Period (ARP)

ARP is an important component which requires management attention since it influence company performance. The company sales can be stimulated by an increase in its accounts receivable (Garcia-Teruel & Martinez-Solano, 2010). A shorter ARP shows the management efficiency in days outstanding sales collection, whereas a longer ARP shows

the inefficiency of the management in days outstanding sales collection. Maintaining higher amounts in the ARP could also increase performance since it can be seen as a quality assurance to customers. Wilner (2000) argued that the period of time customers take to settle their debt also explains the company's performance. The credit sales given to customers turn out to be a cost to the company and possibly resulted to high bad debts, which may reduce profitability. A significant association between ARP and profitability was statistically established by Raheman *et al.* (2010); Nobanee (2009). Deloof (2003); Garcia-Teruel and Martinez-Solano (2007); Gill, *e, al.* (2010); Sen and Oruc (2009). Raheman et al (2010) found insignificant relationship between ARP and profitability. The interpretations of their findings is that a positive coefficient means the higher the number of days in ARP the higher the profitability, whereas the negative coefficient result suggest that the lower the number of days of ARP the higher the firm's performance. Thus, this study hypothesized the relationship between ARP and profitability as follows;

H_1: There is a significant relationship between accounts receivable period and performance

Accounts Payable Period (APP)

The longer the APP, the good for the company (Deloof, 2003), because it serve as an alternative source of short term funds such as trade credits and accrued overheads for the day to day operations of the company. Thus, maintaining good relationship with suppliers could help to achieve efficient WCM as well increase company performance. The financial constraints face by SMEs is mainly due to their inability to secure external funds as a result of information asymmetry and lack of collateral and this also affect the

performance of SMEs. Therefore, if company can secure longer APP and delay its payments to suppliers, this will boost its working capital and increase profitability. A significant relationship between APP and profitability was found in the studies of Garcia-Teruel & Martinez-Solano (2010), Padachi (2006), Raheman *et al.* (2010), Deloof (2003), Nobanee (2009), Falope and Ajilore (2009) and Sen & Oruc (2009). Ganesan (2007) found insignificant relationship between APP and profitability. Interpretation of these findings reveals that a positive coefficient is means that the higher the number of days in APP the higher the profitability, whereas a negative coefficient means the lower the number of days in APP the higher the firm's performance. Thus, this study hypothesized the relationship between APP and profitability as follows;

H_2: There is a significant relationship between accounts payable period and performance

Inventory Holding Period (IHP)

The management of inventory will influence company's performance (Gill, *et al.*, 2010). A lower IHP indicates the management competency in converting inventories into sales. Whereas a longer IHP shows that the management is holding more cash in inventory and can result to declining sales. Efficient management of inventory not only improves company performance, but also averts incidence of emergency ordering (Chowdhury & Amin, 2007). Despite that, maintaining a high investment in inventory may also rescue the company from sudden price changes (Autukaite & Molay, 2011); a lower IHP is effective in attaining optimum WCM. Previous studies such as Deloof (2003); Falope and Ajilore (2009); Raheman and Nasr (2007); Padachi (2006); and Nobanee (2009) found a

significant relationship between IHP and profitability. But Lazaridis and Tryfonidis (2006) found insignificant relationship between IHP and profitability. Lazaridis and Tryfonidis (2006) found insignificant relationship between IHP and profitability. The interpretation of their findings is that positive coefficient means that the higher the number of days in IHP the higher the performance. Conversely the negative coefficient means that the lower the number of days in IHP the higher the firm's performance. Therefore, the study hypothesized the relationship between IHP and performance as follows;

H_3: There is a significant relationship between inventory holding period and performance

Cash Conversion Cycle (CCC)

Zariyawati *et. al.* (2009) asserts that shorter CCC increases firm's performance, making availability of funds for daily activities. Specifically materials are converted into sales and monies are collected promptly. A shorter CCC improves profitability of companies, less reliance on external finance which is difficult and expensive, particularly for SMEs. As such a company will be financing portion of its current assets using suppliers' credit. Additionally, due to insufficient financial resources of SMEs, a shorter CCC will help them to enhance WCM (Nobanee 2009). The Studies by Lazaridis and Tryfonidis (2006); Garcia-Teruel and Martinez-Solano (2007); Padachi (2006); *Raheman et al.* (2010); Sen and Oruc (2009) all have found a significant association between CCC and profitability. While an insignificant relationship between CCC and profitability (e.g Deloof 2003; Samiloglu & Demirgunes 2008). For example, Deloof (2003) and Moss *et al.* (1993)

asserted that small firms have significantly longer CCC. The positive coefficient is interpreted that the higher the number of days in CCC the higher the firm's performance. On the contrary, the negative coefficient means that the lower the number of days in CCC the higher the firm's performance. This study therefore hypothesized the relationship between CCC and performance as follows;

H_4: There is a significant relationship between cash conversion cycle and performance

Debt

A company that maintain high debt proportion means that it uses less internal finances and depends more on external finances as their source of funds. External financing is more costly than internal financing therefore, a firm with lower debt ratio would give more attention to investing funds which were held in the operating cycle into opportunities in the current assets of its WCM (Nazir & Afza, 2009). According to the pecking order theory, Chiou *et. al.* (2006) argued that, companies often seek to first finance its long-term investments using internal funds to minimise agency cost and debt transaction costs. Consequently, a company with lower debt financing tends to have better investment opportunities to increase profit than that which maintain higher debt financing. The studies of Deloof (2003); Gill et al. (2010); Raheman and Nasr (2007); Zariyawati *et al.* (2009); Mathuva (2010); Samiloglu and Demirgunes (2008); Zariyawati *et al.* (2010); Falope and Ajilore (2009); Napompech (2012); Afeef (2011); Mohamad and Saad (2010); and Abuzayed (2012) found a significant relation between debt and

profitability. This study hypothesized the relationship between debt and performance as follows;

H_5: there is a significant relationship between Debt and performance

Size

Size is considered as an important variable in explaining SMEs performance. The main distinguishing factor between SMEs and large firms is the easy access to external finance. It is contended that SMEs have financial constraints, the problem is more critical in smaller size firms with lower sales turnover. This phenomenon arises from their relative size disparities. Studies earlier conducted have used size to show how it influences firms' performance (Faulkender & Wang, 2006). The firm with high amount of resources has more advantage to efficiently manage working capital. For that reason Masso and Vahter (2012) argued that interms resources, size is an important factor, the larger the company the more easy access to resources. Size can motivate a firm to relaxed policy for accounts receivable and inventories, due to their access to more resources and funds. Again, firms with increasing sales volume would require more investment in working capital (Moussawi *et al.*, 2006), and they have opportunities for good performance (Chiou *et al.*, 2006). Empirical findings shows a significant association between size and profitability such as Kieschnich *et al.* (2006); Stephen and Elvis (2011); Deloof (2003); Gill et al. (2010); Zariyawati et al (2009); Mathuva (2010); Lazaridis and Tryfonidis (2006); Garcia-Teruel and Martinez-Solano (2007); Afeef (2011). The relationship between size and profitability was found to be insignificant in the study of Samiloglu & Demirgunes

(2008). Therefore, this study hypothesized the relationship between size and profitability as follows;

H_6: there is a significant relationship between size and performance

3.5 Research Model

The proposed hypothesis of the study was tested by adopting and modifying the models used by Teruel and Solano (2005); Falope and Ajilore (2009). Thus, the impact of the independent variables on SMEs performance was examined through the following models:

$$Performance_{it} = \beta_0 + \beta_1 ARP_{it} + \beta_2 APP_{it} + \beta_3 IHP_{it} + \beta_4 CCC_{it} + \beta_5 DEBT_{it} + \beta_6 SIZE_{it} + \varepsilon$$

Where

Performance = ROA & ROE

i = Company

t = Time Period

ARP = Accounts Receivable Period

APP = Accounts Payable Period

IHP =Inventory Holding Period

CCC = Cash Conversion Cycle

DEBT = Debt (Financial Leverage)

SIZE = Size of the Firm

ε = Error term that is a surrogate for all other variables influencing performance

3.6. Diagnostic Tests

Before regression analysis is conducted, several tests such as normality test, multicollinearity, heteroscedasticity and auto-correlation are carried out.

3.6.1 Normality Test

Normality is a test used to determine whether the data sampled was drawn from a normally distributed population. In multivariate analysis, normality test is highly important (Hair *et. al.,* 2006). This study uses Kolmogorov-Smirnov test to check the normality of the data.

3.6.2 Multicollinearity Test

Multicollinearity analysis is a test used to identify the presence of multicollinearity problem in the model. The main aim of this test is to measure the level of correlation between the independent variables. The problem of multicollinearity exists in a model when the variance inflation factor (VIF) value is more than 10 (Hair *et. al.,* 2006).

3.6.3 Heteroscedasticity Test

In order to detect the problem of heteroscedasticity in the models, the study used Breusch-Pagan-Godfrey test. Gujarati (2003) suggest that in case of large sample test the Breusch-Pagan-Godfrey is more appropriate because is not sensitive to the assumption that the disturbances μi is normally distributed.

3.6.4 Auto-correlation Test

Autocorrelation, also known as serial correlation, it is when a typical data violates the assumption of order of independence. This study apply Wooldridge test in order to detect presence of autocorrelation problem in the models. Wooldridge (2002) and Drukker (2003) suggest that the Lagrange Multiplier test is considered to be most suitable technique to detect problem of serial correlation both in a panel data and the problem can be corrected by incorporating AR(1) in the regression model (Greene, 2003; Wooldridge, 2009; Gujarati, 2003). Previous studies that use AR (1) model includes Rahman, Ibrahim and Mehra (2009); Agoraki, Delis and Pasiouras (2011) and Bhaumik and Piesse (2008). Finally, the autocorrelation problem is verified by checking the Durbin Watson statistics.

3.6.5 Panel Data Analysis

The Hausman test is used to select the most appropriate model for the study between the fixed and random effects models. Therefore the results show that fixed effects model is more appropriate for the study.

3.6.6 Multiple Regression Analysis

In order to solve problems that may exist in the data which include non-normality, heteroscedasticity and serial correlation problems, the study uses general least square (GLS) method of regression analysis to run the data. The GLS method is considered more suitable since it remove the problem of normality in a model. In the case of non-normal data, the GLS as a transformed method of ordinary least square (OLS) is more

appropriate than the OLS (Gujarati, 2003). Whites General Heteroscedasticity and AR (1) are employed to check for heteroscedasticity and autocorrelation problems respectively.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

In this chapter, the results and findings on the impact of WCM, debt and size on performance of Malaysia SMEs are presented and discussed. Section 4.1 concentrates on the descriptive statistics. Section 4.2 focuses on the normality test. While sections 4.3 deal on the analysis of regression result, sections 4.4 present the discussion on the findings.

4.1 Descriptive Statistics

Descriptive statistics is a technique of transforming raw data into a simplest form that will ease the understanding and interpretation of the data. It is worthwhile in a study because it is a preliminary approach that helps to explain and provide analytical information on each variable of the data. Table 4.1 presents the descriptive statistical analysis for the dependent and independent variables of the study.

Table 4.1 Descriptive Statistics

Variables	N	Mean	Std. Dev.	Min.	Max.
ROA	743	-1.13456	11.05172	-31.7539	14.87743
ROE	743	5.584568	124.7166	-336.056	281.318
ARP	743	42.10813	36.74521	9.913445	165.5143
APP	743	61.59568	62.18882	12.84082	264.8978
IHP	743	143.2964	100.8716	33.41276	438.5444
CCC	743	119.664	100.6053	-50.79	373.0849
DEBT	743	112.5184	44.99028	44.653	235.76
SIZE	743	6.651705	0.596491	5.547258	7.669302

Table 4.1 shows that the dependent variable - ROA which is one of the measurements of working capital has a mean value of -1.14 percent. This indicates that many number of SMEs incurred net loss during the period, meaning that they could not efficiently convert their assets into profit. This result is supported based on the finding of Tauringana and Afrifa (2013) that reported a ROA mean of -1.43 percent of listed SMEs in UK. In the case of ROE, it has a mean of 5.58 percent.

Again Table 4.1 shows the statistics of the independent variables. The numbers of days to receive monies for credit sales from customers (ARP) takes an average of 42 days while the minimum and maximum days are 10 days and 165 days respectively. Similarly, a firm takes an average of 62 days to pay suppliers (APP) and on then delays for a minimum of 13 days and maximum of 265 days. The difference in ARP and APP shows that the firms can have cash flow for their daily operations since the number of days in paying suppliers is higher than the sales outstanding collection period. The mean for IHP is 143 days and minimum of 33 days to convert inventory into sales. The CCC used as a proxy to

measure the efficiency of the firms in WCM has a mean of 119 days. This indicates that a firm takes an average of 119 days for a complete WCM cycle in order for the firms to transform inventories into cash. The study of Lazaridis and Tryfonidis (2006) found a mean of 188 days for the CCC. Finally, debt has a mean of 113 percent with a minimum of 44 percent and maximum of 235 percent while size has a mean of 7 percent.

4.2 Normality test

Table 4.2 below shows the result of normality test on the data for this study by using Kolmogorov-Smirnov and Shapiro-Wilk.

Table 4.2 Normality Test Result

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
ROA	.300	743	.000	.527	743	.000
ROE	.369	743	.000	.407	743	.000
ARP	.064	743	.000	.964	743	.000
APP	.059	743	.000	.956	743	.000
IHP	.031	743	.098	.979	743	.000
CCC	.241	743	.000	.633	743	.000
DEBT	.058	743	.000	.970	743	.000
SIZE	.044	743	.002	.970	743	.000

The result in Table 4.2 indicated that the Kolmogorov-Smirnov test result is significant (0.000), suggesting violation of normality assumption of the data and meaning that the sample is not normal. Nevertheless, according to Pallant (2007), violation of normality assumption in a large sample size should not cause a major concern to a study, since most of the multiple regressions and general analysis of the results can hardly be affected by

the normality assumptions. Again Pallant, (2007) and Hair *et. al. (*2006), state that an observation more than 100 is regarded as a large sample size. Hence, the sample size for this research which is 743 observations will be considered as large and therefore violation of normality assumption is not a serious problem.

4.3 Correlation Matrix

The correlation matrix depicted in Table 4.3 shows the relationship among the variables used for this study.

Table 4.3 shows the correlation between the variables used for this study.

	ROA	**ROE**	**ARP**	**APP**	**IHP**	**CCC**	**DEBT**	**SIZE**
ROA	1							
ROE	0.754	1						
	(0.000)	-----						
ARP	-0.136	-0.176	1					
	(0.001)	(0.000)	-----					
APP	-0.388	-0.375	0.669	1				
	(0.000)	(0.000)	(0.000)	-----				
IHP	0.069	0.038	0.403	0.814	1			
	(0.086)	(0.350)	(0.000)	(0.000)	-----			
CCC	0.271	0.244	-0.008	0.558	0.825	1		
	(0.000)	(0.000)	(0.000)	(0.836)	(0.000)	-----		
DEBT	-0.496	-0.455	0.516	0.022	-0.42	-0.123	1	
	(0.000)	(0.000)	(0.580)	(0.000)	(0.002)	(0.000)	-----	
SIZE	0.395	0.39	-0.379	-0.268	0.113	-0.054	-0.339	1
	(0.000)	(0.000)	(0.000)	(0.000)	(0.175)	(0.005)	(0.000)	-----

Observations: 743

Table 4.3 shows that the minimum and maximum correlations among the variables are 0.008 and 0.825 respectively. According to Pallant (2007), multicollinearity exists in a data when correlation value is 0.9 and above.

4.4 Multicollinearity test

In order to check the problem of multicollinearity in the data, a variance inflation factor (VIF) is computed and reported in Table 4.4. The value of the independent variables from the VIF statistics shown in the Table ranges from 1.29 to 8.45 and the VIF mean is 4.48. It was found that the statistical result is within the limit since they are less than 10 indicating that there is no issue of multicollinearity in the data (Gujarati & Sangeetha, 2008; Hair *et al.*, 2006). This led to the assumption that there is no incidence of multicollinearity in the data for this study.

Table 4.4 Variance Inflation Factor (VIF)

Variables	**VIF**	**1/VIF**
ARP	8.45	0.118345
APP	4.58	0.218362
IHP	7.78	0.128503
CCC	2.49	0.402155
DEBT	2.28	0.438613
SIZE	1.29	0.772657
Mean VIF	4.48	

4.5 Heteroscedasticity and Autocorrelation

The homoscedasticity test shows a chi-square value of 796.87 and 506.93 for both ROA and ROE respectively with a p-value of 0.0000. This Means that the null hypothesis is rejected indicating that there is problem of Heteroskedasticity in the data for both models. While the autocorrelation test shows F(1, 104) = 0.001and Prob > F = 0.9757 for the ROA, and then F(1, 104) = 2.526 and Prob > F = 0.1150 for the ROE. This Means that the null hypothesis is rejected indicating that there is problem of autocorrelation in the data for both models.

4.5 Panel Data Analysis

The Hausman test was used to choose the appropriate estimation model between the fixed effects and random effects models. The results indicate that fixed effects model is more appropriate for the study.

Taking into consideration the problems non-normality, heteroscedasticity and autocorrelation problems that exist in the data, the regression analysis of this study is achieved by using GLS estimation (Generalized Least Square). The problem of non-normality of the data is reduced by applying the GLS method of estimation. Gujarati (2003) suggest that for the non-normal data, the GLS is more suitable than the OLS. Furthermore, Baltagi (2008) suggest that when the sample is large, GLS is more appropriate above OLS for serial correlation or heteroskedasticity problems. Also, the White's General Heteroskedasticity and AR (1) are used to solve the problems of

heteroskedasticity and autocorrelation. The multiple regression analysis results for the ROA and ROE are depicted in Table 4.5 and Table 4.6 respectively.

Table 4.5 Regression Analysis for the Independent Variables on ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.837051	0.256032	11.08085	0.0000
ARP	-1.015391	0.129467	-7.842837	0.0000
APP	-0.038031	0.023044	-1.650394	0.0994
IHP	1.021526	0.130024	7.856428	0.0000
CCC	0.029071	0.034004	0.854921	0.3929
DEBT	-0.214816	0.035544	-6.043679	0.0000
SIZE	0.036155	0.012614	2.866251	0.0043
AR(1)	0.113893	0.031612	3.602875	0.0003
R-squared	0.508213			
Adjusted R-squared	0.502749			
F-statistic	93.00614			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.003349			
N	638			

Table 4.5 above, shows an overall significant result of the F-statistic for the ROA model, signifying an association between the pools of independent variables and the model. The adjusted R^2 value for ROA is 0.502749, which means that the model consisting of the independent variables explains 50 percent of variation in the ROA. Furthermore, the

Table shows that ARP, IHP, DEBT and SIZE are found to be significant at 1 percent level to ROA. On the other hand, APP and CCC are found to be insignificant to ROA. This shows that only APP and CCC are insignificant on SMEs performance. Among these variables, only three variables (ARP, APP and DEBT) have negative relationship with ROA, while the remaining independent variables have positive relationship with ROA. The negative coefficient means that when ARP, APP and DEBT decrease, the performance of the firm increase. Debt has the highest beta coefficient value of 0.214816, signifying that its contribution to the model is strong. The Durbin Watson statistic of 2.0 is within the boundary and supporting that the model is acceptable for decision making (Ibor, 2015).

The relationship between the independent variables and ROE is presented in Table 4.6.

Table 4.6 Regression Analysis for the Independent Variables on ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.171165	0.193443	26.73227	0.0000
ARP	-0.897462	0.198662	-4.517519	0.0000
APP	0.032953	0.042275	0.779499	0.4360
IHP	0.835237	0.203995	4.094401	0.0000
CCC	0.045885	0.059410	0.772332	0.4402
DEBT	-0.230496	0.042162	-5.466847	0.0000
SIZE	0.071419	0.020006	3.569948	0.0004
AR(1)	0.100794	0.035284	2.856641	0.0044
R-squared	0.334650			
Adjusted R-squared	0.327257			

S.E. of regression	0.867471
F-statistic	45.26710
Prob. (F-statistic)	0.000000
Durbin-Watson stat	1.983440
N	638

Based on Table 4.5 above, the F-statistic shows overall significant result for the ROE model, indicating that the relationship between the groups of independent variables and the model. The adjusted R^2 value for ROE is 0.327257, which means that the model comprising of the independent variables explains 33 percent of variation in the ROE. Moreover, the Table shows that all the independent variables (ARP, IHP, DEBT and SIZE) are found to be significant at 1 percent level to ROE except APP and CCC that are insignificant to ROE. This shows that only APP and CCC have insignificant impact on SMEs performance. Among the independent variables, only two variables (ARP and DEBT) have negative relationship with ROE, while the remaining variables have positive relationship with ROE. The negative coefficient means that when ARP and DEBT decrease, the performance of the firm increase. ARP has the highest beta coefficient value of 0.897462, signifying that its contribution to the model is strong. The Durbin Watson statistic of 1.98 is within the boundary and supporting that the model is acceptable for decision making (Ibor, 2015). The insignificant result of APP and CCC on ROE is consistent with the result of APP and CCC on ROA.

4.5 Results Analysis and Discussions

In the discussion of the results, each independent variable and its impact on profitability is analyse and linked to previous findings on WCM. The discussion is based on the results as presented in Table 4.5 and Table 4.6 for ROA and ROE respectively.

4.5.1 Accounts Receivable Period (ARP) and SMEs performance

ARP is found to be negatively significant for both ROA and ROE. The results suggest that the management of ARP has impact on SMEs performance. Meaning that reducing the number of days to recover credit sales outstanding to customers will increase the firm's profitability. Again, the negative coefficient means that a decrease in days sales outstanding results to an increase in profitability. The significant relationship between ARP and profitability will reduce or eliminate credit defaults (Cheng & Pike, 2003; Martinez-Sola *et al.,* 2012). Moreover, the negative relation also indicates that if the credit sales can be recovered early from customers, then the cash flow can be invested in a profitable project to improve the firm's profitability. Therefore the negative coefficients of ARP suggest that, the lower the ARP, the higher the SMEs performance.

The finding of this study is consistent with many existing studies that found ARP to be significant negatively associated to profitability including Deloof (2003); Lazaridis and Tryfonidis (2006); Padachi (2006); Garcia-Teruel and Martinez-Solano (2007); Samiloglu and Demirgunes (2008); Sen and Oruc (2009); Falope and Ajilore (2009); Mathuva (2010); Gill *et al.* (2010). Moreover, the result supports the hypothesis that there is a significant relationship between ARP and profitability.

4.5.2 Accounts Payable Period (APP) and SMEs performance

The results from Table 4.5 and Table 4.6 show that the relationship between APP and profitability are insignificant for both ROA and ROE. Hence, that APP has insignificant impact on SMEs performance. This finding is consistent with the study of Raheman *et al.,* (2010) and Stephen and Elvis (2011) they all found insignificant relationship between APP and profitability. The finding does not support the hypothesis that there is a significant relationship between APP and profitability.

4.5.3 Inventory Holding Period (IHP) and SMEs performance

IHP was found to be significantly associated with ROA and ROE. This explains that the management of IHP will influence firm's performance. Additionally, the significant positive relationship postulates that the longer the IHP, the higher the profitability. It also indicates that higher inventory levels will minimise the effect of probable disruptions in the production and as well protect the firm from loss of sales due to paucity of goods. Another benefit of maintaining high level of inventories is that it reduces the cost of supply and saves the firm against any price flux due to adverse macroeconomic factors. It was contended that SMEs invest more on current assets than in fixed assets, therefore holding high inventory is aimed to increasing sales by meeting the customers demand and consequently improve firm's profitability (Afrifa *et al.,* 2015).

The study by Mathuva (2010); Gill et al. (2010); Nobanee (2009); Lyroudi and Lazaridis (2000); Abuzayad (2012) all found a significant positive relationship between IHP and

profitability. This finding supports the hypothesis that there is a significant relationship between IHP and profitability.

4.5.4 Cash Conversion Cycle (CCC) and SMEs performance

The CCC as the comprehensive measurement of WCM efficiency is found to be insignificantly related to ROA and ROE.

The finding is consistent with Deloof (2003), Gill *et al.* (2010), Padachi (2006), Stephen and Elvis (2011). This result does not support the hypothesis that there is significant relationship between CCC and profitability.

4.5.5 Debt and SMEs performance

Table 4.4 shows that the relationship between Debt with ROA and ROE is negative and significantly related. The negative coefficients indicate that SMEs use less external financing to improve the firms performance. This relationship conforms to the pecking order theory (Myers, 1984) and this is basically recommended empirically in prior studies of the pecking order financing structure among SMEs (Zoppa & McMahon, 2014). According to the pecking order theory, firms prefer to use internal financing unless where the firm does not have sufficient internal funds that short term debt financing is to be considered. A decrease in debt ultimately resulted to an increase in funds available for daily operations and feasible projects and consequently higher profitability. The financial

leverage which has negative relationship with profitability implying that any decrease in debt utilizes by the firms can increase profitability.

This result supports the hypothesis that there is significant relationship between debt and profitability. The findings is consistent with previous studies such as Afza and Nazir (2009); Falope and Ajilore (2009); Zariyawati *et al.,* (2009), Padachi (2006); Raheman and Nasr (2007); Banos-Caballero et al. (2010).

4.5.6 Size and SMEs performance

Company size is found to have significantly positive association with ROA and ROE. And the positive coefficient suggests that firms which are bigger in size have higher ROA and ROE. The larger the company size increases, the higher the profitability of the company increase. This can be connected to the fact that bigger firms take advantage of economies of scale to increase profitability due to reduction in cost of innovation and operations (Serrasqueiro & Nunes, 2008). Larger companies have the ability to expand their business by strategically diversifying into different geographical areas or develop a new product (Yang & Chen 2009). This diversification will help them to become less susceptible to failure and also assist them in profitable ventures. Zoppa and McMahon (2002) indicate that when SMEs increases in size, then they became more dependent on short-term financing.

This result is consistent with existing studies (see: Falope & Ajilore, 2009; Garcia-Teruel & Martinez-Solano, 2007). This finding supports the hypothesis that there is significant relationship between size and profitability.

The summary of the results of hypotheses tested for the independent variables ARP, APP, IHP, CCC, DEBT and SIZE on performance is presented in Table 4.7 below.

Table 4.7 Summary of Results of Hypotheses testing

Hypotheses	**ROA**	**ROE**
H_1: there is significant relationship between ARP and profitability	Hypothesis supported	Hypothesis supported
H_2: there is significant relationship between APP and profitability	Hypothesis not supported	Hypothesis not supported
H_3: there is significant relationship between IHP and profitability	Hypothesis supported	Hypothesis supported
H_4: there is significant relationship between CCC and profitability	Hypothesis not supported	Hypothesis not supported
H_5: there is significant relationship between DEBT and profitability	Hypothesis supported	Hypothesis supported
H_6: there is significant relationship between SIZE and profitability	Hypothesis supported	Hypothesis supported

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter offers the summary and conclusion of major findings of the study, the policy implications of the findings, limitations of the study and finally suggestions for further research and improvements.

5.1 Summary of Research, Findings and Conclusion

This study appraises the impact of WCM, debt and size on SMEs performance of Malaysian manufacturing sector. The study used an unbalanced panel data sample of 105 manufacturing companies from 1996 to 2015 obtained from the companies' commission of Malaysia (CCM).

The study found that there is significantly negative relationship between performance and the ARP for both ROA and ROE. This indicates that the lower the ARP the higher the SMEs performance. The result suggests that managers can increase firms' performance by reducing the number of days for cash collection of credit sales from its customers through effective credit policy. APP is insignificantly related to performance. Thus, APP has insignificant impact on the performance of SMEs in Malaysia. But IHP is found to have significantly positive relationship with both ROA and ROE. The positive relationship indicates that SMEs hold longer inventory in order to meet customers

demand and to avoid sudden price changes. The CCC is insignificantly related to performance. CCC as a measurement of WCM efficiency, hence the insignificant relationship between CCC and performance is because all the three components of WCM had connection to the CCC. In support of this argument Deloof (2003) states that '*the insignificant results between cash conversion cycle and ROA is not a surprise because ROA declines with inventory holding period and accounts receivable period, but also with the accounts payable period, which is subtracted to calculate the cash conversion cycle*'.

Debt has significant negative relationship with both ROA and ROE. The negative relationship conforms to the pecking order theory that suggests the use of internal financing against external financing by SMEs. Hence, the lower the ratio of SMEs financial leverage the more the firm increases profitability. Finally, the company size measured by the natural logarithm of sales was found to have a significant positive relationship with both ROA and ROE. This relationship shows that as the company size increase, the profitability of the company also increase. Investment in current assets has a higher cost of funds for SMEs; hence they have lower inventories and accounts receivables due to their dependence on suppliers for trade credit.

5.2 Implications of the study

The results of this study would assist the financial managers to understand and ascertain how the WCM, debt and size can impact the company's performance. The findings also

help them to design effective credit policies and maintaining good customer relationship as well good relationship with trade creditors.

The findings will also be useful to National SME Development Council considered as the zenith policy making agency for strategizing, promoting, and developing SMEs in Malaysia and other regulatory agencies. The findings will assist them in monitoring and evaluating SMEs performance to ensure that they do not have working capital problems.

Sequel to the SMEs contribution to Malaysia GDP, the study of WCM on SMEs performance is important given the fact that any policy implications derived from such findings has tendency to influence economic growth. Finally, the findings have important implication for policy-makers who prescribe financial assistance mechanisms for SMEs.

5.3 Limitation of the study

Based on literature available, this is the first study on the impact of WCM, debt and size on SMEs performance in Malaysia. Major limitations encountered among others are first; that SMEs are not required by law to publish financial reports, therefore they are not subjected to rigorous scrutiny and monitoring by the regulatory agencies and stakeholders. As such, there financial statements are not prudent. Second, the sample size of 105 manufacturing companies is small considering the number of SMEs in Malaysia. Also, many companies had to be dropped due to incomplete data. Another limitation is that the study focused mainly on manufacturing firms. Therefore, the findings cannot be generalized to all SMEs in Malaysia.

5.4 Recommendation for Future Research

Given the limitations listed above, a number of opportunities for improvements and further research are presented. Firstly this study can be replicated to cover all Malaysian SMEs in all the sectors. Secondly, other studies can use proxies beside ROA and ROE used in this study as a measure of profitability to test the influence of WCM. Thirdly, to conduct a comparative study between manufacturing sector and service sector of SMEs' in Malaysia or between Malaysia SMEs and other country to explore whether there are any differences in their WCM practices.

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