MHD ANAS HUSARIA

THE EFFECT OF WORKING CAPITAL MANAGEMENT ON FIRMS' PROFITABILITY: COMPARATIVE STUDY ON MIDDLE EAST AND WEST EUROPE COMPANIES

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Abstract

This thesis investigates the relationship between working capital management and profitability of firms in the Middle East and Europe. This study used a sample of 54 firms listed in the Middle East and West Europe for the period of 2012-2013. The aim of this research is to test the effect of working capital management in the form of cash conversion cycle measurements on the profitability of firms in the Middle East and Europe. The results of this study revealed that there is no statistically significant relationship between cash conversion cycle measurements and profitability of firms measured as Return on Asset. Moreover, managers should use other tools and strategies to improve their firm's profitability rather than managing the working capital efficiently.

Keywords: Working Capital Management, Profitability, Cash Conversion Cycle, Receivable Turnover Days, Payable Turnover Days, Inventory Turnover Days, Return on Asset.

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1. Introduction:

In the last decades there have been many research papers and articles investigated the significance of working capital management with regard to its effect on the profitability of companies. According to Almeida and Jr (2014), with an efficient management of working capital, firms could lower their reliance on external financing and use the released cash for additional investment and for enhancing the firm's financial flexibility. A considerable number of researchers have conducted studies in several parts of the world within different markets and industries on the importance of efficiently managing working capital in order to maximize firm's profitability and eventually improve firm's performance.

Working capital can be managed using the cash conversion cycle determinants which are: Account receivable days, Inventory days and Account payable days. Deloof (2003) conducted a research on the Belgian market, which emphasized that cash conversion cycle is a popular measure of Working Capital Management (WCM) considering the waiting time between costs and expenses of purchases of raw material and the collection of sales of the finished goods. The longer the time it takes, the greater the money invested in working capital.

Raheman and Nasr (2007), suggested that maximizing profit with neglecting liquidity costs can cause bankruptcy or insolvency for the firm. Hence a corporate must examine an equilibrium point between liquidity and profitability using the three factors of cash conversion cycle in the best way according to the characteristics of the firm's industry. At the same time, Deloof (2003) pointed again that a company must find a trade-off between its profitability and liquidity. Moreover, Deloof (2003) suggested that working capital management has an essential role in determining the company's profitability. According to several studies that have been conducted on different firms and industries, there were always different results on how the company's performance in term of profitability is linked to the effective management of its working capital, specifically cash conversion cycle.

The Middle East market is always interesting to study, due to the fact of being an emerging market. Additionally, the consideration of the Middle East special business environment and political instability that some regional countries have. Moreover, the several economic and political factors which are influencing the trade and flow of cash in the Middle East have given the Middle East its specificity and unique characteristics. This study aims to determine what type of relationship exists between the working capital management in term of its components and the profitability of the firm in the Middle East and compare it to the situation in Europe. This study will try to provide a proof for managers to rely on when they make their working capital management decisions.

2. Literature review:

2.1. Working Capital Management:

The Definition of Net Working Capital is “Current assets minus current liabilities.” (Van Horne and Wachowicz, 2008, p.206). According to Ding et al. (2013), working capital is often used to quantify a company’s liquidity. “Working capital is a double-edged sword-companies need working capital to effectively operate, yet working capital is costly because it must be financed and can entail other operating costs, such as credit losses on accounts receivable and storage and logistics costs for inventories.” (Subramanyam and Wild, 2009, p.222-223)

Working capital could also be an interesting indicator for investors “It is important as a measure of liquid assets that provide a safety cushion to creditors. It is also important in measuring the liquid reserve available to meet contingencies and the uncertainties surrounding a company’s balance of cash inflows and outflows.” (Subramanyam and Wild, 2009, p.222-223)

The definition of Working Capital Management is “the administration of the firm’s current assets and the financing needed to support current assets.” (Van Horne and Wachowicz, 2008, p.206) Working capital management should answer some very important questions that affect the firm’s sustainability and shape its financial strategy, in both short and long term which are: “how much cash and inventory should we keep in hand? Should we sell on credit to our customers? How will we obtain any needed short-term financing? If we borrow in the short term, how and where should we do it?” (Ross, Westerfield and Jordan, 2008, p.7) According to Akinlo (2012), working capital management is an essential practice for firms. According to Bei and Wijewardana (2012), some companies should assume formal policy of working capital management (WCM) so as to lower the possibility of business failure, and to improve business performance.

To further explain the importance of working capital, basically: “managing the firm’s working capital is a day-to-day activity that ensures the firm has sufficient resources to continue its operations and avoid costly interruptions. This involves a number of activities related to the firm’s receipt and disbursement of cash” (Ross, Westerfield and Jordan, 2008, p.6). Additionally, working capital management has essential implications due to several reasons: “for one thing, the current assets of a typical manufacturing firm account for over half of its total assets. For a distribution company, they account for even more.” (Horne and Wachowicz, 2008, p.206). Moreover, “excessive levels of current assets can easily result in a firm realizing a substandard return on investment. However, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations.” (Horne and Wachowicz, 2008, p.206)

The significance of working capital management differs according to the firm size "for small companies, current liabilities are the principal source of external financing. These firms do not have access to the longer-term capital markets, other than to acquire a mortgage on a building. The fast-growing but larger company also makes use of current liability financing." (Horne and Wachowicz, 2008, p.206). Accordingly, there is a responsibility on financial managers to direct working capital, "for these reasons, the financial manager and staff devote a considerable portion of their time to working capital matters. The management of cash, marketable securities, accounts receivables, accounts payable, accruals, and other means of short-term financing is the direct responsibility of the financial managers; only the management of inventories is not. Moreover, these management responsibilities require continuous, day-to-day supervision." (Horne and Wachowicz, 2008, p.206)

2.1.1. Cash Conversion Cycle:

Cash Conversion Cycle or Cash Cycle defined as "the length of time from the actual outlay of cash for purchases until the collection of receivables resulting from the sale of goods or services." (Van Horne and Wachowicz, 2008, p.146) The calculation of the Cash Conversion Cycle could be "subtract the firm's payable turnover in days (PTD) from its operating cycle and thus we produce the firm's cash cycle" (Van Horne and Wachowicz, 2008, p.146)

"The gap between short-term inflows and outflows can be filled either by borrowing or by holding a liquidity reserve in the form of cash or marketable securities. Alternatively, they can be shortened by changing the inventory, receivable, and payable period." (Ross, Westerfield and Jordan, 2008, p.491)

Operating Cycle is defined as "the length of time from commitment of cash for purchases until the collection of receivables resulting from the sale of goods or services" and "mathematically, a firm's operating cycle is equal to: Inventory Turnover in Days (ITD) + Receivable Turnover in Days (RTD)." (Van Horne and Wachowicz, 2008, p.146) According to Ajao and Nkechinyere (2012), it is very essential for companies to attempt to manage their operating cycle efficiently since it affects the company's profit. Moreover, Ajao and Nkechinyere (2012) suggested that the more time the operating cycle is taking, the lower profit the company makes and the more risky it becomes.

According to (Van Horne and Wachowicz, 2008, p.146), Cash Conversion Cycle can be calculated as the following:

$$Cash\ Conversion\ Cycle = Operating\ Cycle - Payable\ Trunover\ in\ Days$$

Or equivalently

$$CCC = (ITD + RTD) - PTD$$

It is known that, “cash cycle depends on the inventory, receivables, and payables periods. The cash cycle increases as the inventory and receivables period get longer. It decreases if the company is able to defer payment to of payables and thereby lengthen the payable period.” (Ross, Westerfield and Jordan, 2008, p.495)

Positive or negative cash cycle could be useful indicator showing us how the company processes its financial operations “most firms have a positive cash cycle, and they thus require financing for inventories and receivables. The longer the cash cycle, the more financing is required. Also, changes in the firm’s cash cycle are often monitored as an early-warning measure. A lengthening cycle can indicate that the firm is having trouble moving inventory or collecting on its receivables. Such problems can be masked, at least partially, by an increased payable cycle, so both should be monitored” (Ross, Westerfield and Jordan, 2008, p.495) According to Pouraghajan and Emamgholipurarchi (2012), a firm’s management could increase the profitability of their firm by reducing its cash conversion cycle.

2.1.2. Receivables Turnover:

First definition is the accounts receivable period which is “the time between sale of inventory and collection of the receivables.” (Ross, Westerfield and Jordan, 2008, p.491)

Receivable turnover is very important indicator to show the efficiency of the company in performing its financial activities. “The Receivable Turnover (RT) ratio provides insight into the quality of the firm’s receivables and how successful the firm is in its collections. This ratio is calculated by dividing receivables into annual net credit sales.” (Van Horne and Wachowicz, 2008, p.142)

$$Receivable\ Turnover\ = \frac{Annual\ net\ credit\ sales}{Receivables}$$

Receivable turnover could indicate to a very valuable information, but mainly “this ratio tells us the number of times accounts receivable have been turned over (turned into cash) during the year. The higher the turnover, the shorter the time between the typical sale and cash collection.” (Van Horne and Wachowicz, 2008, p.142) Additionally, “the receivables turnover ratio indicates how often, on average, receivables resolve-that is, are received and collected during the year.” (Subramanyam and Wild, 2009, p.537)

In order to get more definite and clear number to show the receivable turnover, analysts found the Receivable Turnover in Days (RTD), or the Average Collection Period, which is defined as “the average number of days for which receivables are outstanding before being collected” (Van Horne and Wachowicz, 2008, p.143) and, It’s calculated by dividing the accounts receivable turnover ratio into the number of days in a year as the following:

$$\frac{Days\ in\ the\ year}{Receivable\ Turnover}$$

Or equivalently

$$\frac{Receivables\ \times Days\ in\ the\ year}{Annual\ Credit\ Sales}$$

"While the accounts receivable turnover ratio measures the speed of collections and is useful for comparison purposes, it is not directly comparable to the term of trade a company extends to its customers. This latter comparison is made by converting the turnover ratio into days of sales tied up in receivables. The days' sales in receivables measure the number of days it takes, on average to collect accounts receivable based on the year-end balance in accounts receivable." (Subramanyam and Wild, 2009, p.538)

Authors indicate that Receivable Turnover in Days must be compared to the industry average, "accounts receivable turnover rates and collection periods are usefully compared with industry averages or with the credit term given by the company" (Subramanyam and Wild, 2009, p.538), and it's important because "the trend in collection period over time is important in helping assess the quality and liquidity of receivables" (Subramanyam and Wild, 2009, p.539). There are many interpretations to the number that Receivable Turnover in Days could give us "although too high an average collection period is usually bad, a very low average collection period may not necessarily be good. A very low average collection period may be a symptom of credit policy that is excessively restrictive. The few the receivables on the books may be of prime quality, yet sales may be curtailed unduly – and profits less than they might be – because of the restrictive insurance of credit to customers. In this situation, perhaps credit standards used to determine an acceptable credit account should be relaxed somewhat." (Van Horne and Wachowicz, 2008, p.143)

2.1.3. Payable Turnover:

The first term to encounter here is the Accounts Payable Period which is defined as "the time between receipt of inventory and payment for it." (Ross, Westerfield and Jordan, 2008, p.491)

As Van Horne and Wachowicz (2008) mentioned, that they calculate payable turnover in the same way they did in receivable turnover, and according to them we can compute Payable Turnover in Days (PTD) or Average Payable Period as following:

$$\frac{Days\ in\ the\ year}{Payable\ Turnover}$$

Or, equivalently,

$$\frac{Accounts\ Payable\ \times Days\ in\ \ the\ year}{Annual\ Credit\ Purchases}$$

With an indication for the importance of this number "the average payable period is valuable information in evaluating the probability that a credit applicant will pay on time." (Van Horne and Wachowicz, 2008, p.144) "The average payable days outstanding provides an indication of the average time the company takes in paying its obligations to suppliers. The longer the payment period, the greater the use of suppliers' capital." (Subramanyam and Wild, 2009, p.542)

2.1.4. Inventory Turnover:

The amount of inventory the company keeps has in general an effect on its sales and profitability, "in most companies, a certain level of inventory must be kept. If inventory is inadequate, sales volume declines below an attainable level. Conversely, excessive inventories expose a company to storage costs, insurance, taxes, obsolescence, and physical deterioration. Excessive inventories also tie up funds that can be sued more profitably elsewhere. Due to risks in holding inventories and given the inventories are further removed from cash than receivable are, they are normally, considered the least liquid current asset." (Subramanyam and Wild, 2009, p.539)

According to Subramanyam and Wild, 2009, one of the essential tools for analyzing and evaluating the firm's liquidity and quality of inventories is the inventory turnover ratio which "measures the average rate of speed at which inventories move through and out of a company." (Subramanyam and Wild, 2009, p.539) Inventory period is defined as "the time it takes to acquire and sell inventory." (Ross, Westerfield and Jordan, 2008, p.491)

The main reason for calculating the Inventory Turnover (IT) ratio, is "to help determine how effectively the firm is managing inventory (and also to gain an indication of the liquidity of inventory)." (Van Horne and Wachowicz, 2008, p.145) It could be calculated according to the following equation:

$$\frac{Cost\ of\ goods\ sold}{Inventory}$$

As an interpretation for what the inventory turnover can show us, "generally, the higher the inventory turnover, the more efficient the inventory management of the firm and the

'fresher', more liquid, the inventory. However, sometimes a high inventory turnover indicates a hand-to-mouth existence. It therefore might actually be a symptom of maintaining too low a level of inventory and incurring frequent stock outs. Relatively low inventory turnover is often a sign of excessive, slow-moving, or obsolete items in inventory. Obsolete items may require substantial write-downs, which, in turn, would tend to negate the treatment of at least a portion of the inventory as a liquid asset. Because the inventory turnover ratio is a somewhat crude measure, we would want to investigate further any perceived inefficiency in the inventory management. In this regard, it is helpful to compute the turnover of the major categories of inventory to see whether there are imbalances, which may indicate excessive investment in specific components of the inventory." (Van Horne and Wachowicz, 2008, p.145)

More specific measure of inventory activity and "measure if inventory turnover useful in assessing a company's purchasing and production policy" (Subramanyam and Wild, 2009, p.540), is the Inventory Turnover in days (ITD) measure, which it shows us, the "number of days required to sell ending inventory assuming a given rate of sales" (Subramanyam and Wild, 2009, p.540) or in other words "how many days, on average, before inventory is turned into accounts receivable through sales." (Van Horne and Wachowicz, 2008, p.145) it's calculated as the following equation:

$$\frac{Days\ in\ the\ year}{Inventory\ Turnover}$$

Or, equivalently

$$\frac{Inventory\ \times\ Days\ in\ the\ year}{Cost\ of\ Goods\ Sold}$$

This number could give us too many useful indications, "when inventory turnover decreases over time, or is less than the industry norm, it suggests slow-moving inventory items attributed to obsolescence, weak demand, and or non-salability. These conditions question the feasibility of a company recovering inventory costs. We need further analysis in this case to see if decreasing inventory turnover is due to inventory buildup in anticipation of sales increase, contractual commitments, increasing prices work stoppages inventory shortages or other legitimate reason. We also must be aware of inventory management (such as just-in-time systems) aimed at keeping inventory levels low by integrating ordering, producing, selling, and distributing. Effective inventory management increases inventory turnover." (Subramanyam and Wild, 2009, p.540)

2.2. Firms Profitability:

In this study we will consider profitability with regard to the firm's ability in generating profit according to its invested assets, so we will measure Return on Investment or the so called Return on Assets which is defined as the "measure of profit per dollar of assets." (Ross, Westerfield and Jordan, 2008, p.62) It "measures overall effectiveness in generating profits with available assets; earning power of invested capital." (Van Horne and Wachowicz, 2008, p.157) According to Ross, Westerfield and Jordan (2008) it is calculated as the following:

$$Return\ on\ Assets\ (ROA) = \frac{Net\ Income}{Total\ Assets}$$

2.3. Relationship between Working Capital Management and Firms' Profitability:

2.3.1. Definitions:

Many previous studies suggested that there is an influence for working capital management decisions on the firms' profitability and on other factors. "More fundamental, however, is the effect that working capital decisions have on the company's risk, return, and share price." (Van Horne and Wachowicz, 2008, p.206) According to Aktas et al. (2015), the efficient management of working capital is highly essential for firms mainly during the period of increasing investment opportunity set. According to Lind et al. (2012), with an efficient management of working capital, a firm could raise capital for additional strategic goals, decrease the financial expenses and increase profitability. According to Knauer and Wöhrmann (2013), working capital management is strongly vital to a company's success. Moreover, according to Mousavi and Jari (2012), there is a positive association between working capital management and the performance of a firm.

Theories suggest that there is a strong relationship between working capital management in term of cash conversion cycle measures and the firm profitability, "we can easily see the link between the firm's cash cycle and its profitability by recalling that one of the basic determinants of profitability and growth for a firm is its total asset turnover, which is defined as sales/total sales." (Ross, Westerfield and Jordan, 2008, p.495) "The higher this ratio is, the greater are the firm's accounting return on assets, ROA, and return on equity ROE. Thus, all other things being the same, the shorter the cash cycle is, the lower is the firm's investment in inventories and receivables. As a result, the firm's total assets are lower, and total turnover is higher." (Ross, Westerfield and Jordan, 2008, p.495) According to Agha (2014), a firm could increase its profit by its managing working capital efficiently.

Working capital management is widely considered as a valid tool to affect profitability and other financial factors. According to Vishnani and Shah (2007), the strategies and

practices of working capital management have a profound effect on the profitability of companies. “Many companies attempt to improve profitability and cash flow by reducing investment in current assets through methods such as effective credit underwriting and collection of receivables, and just-in-time inventory management. In addition, companies try to finance a large portion of their current assets through current liabilities, such as accounts payable and accruals, in an attempt to reduce working capital. Because of the impact of current assets (and current liabilities) on liquidity and profitability, analysis of current assets (and current liabilities) is very important in both credit analysis and profitability analysis.” (Subramanyam and Wild, 2009, p.223)

In addition to that, working capital management undertakes two essential decisions for the firm, which are the examination of “the optimal level of investment in current assets, and the appropriate mix of short-term and long-term financing used to support this investment in current assets.” (Van Horne and Wachowicz, 2008, p.206) While, “in turn, these decisions are influenced by the trade-off that must be made between profitability and risk.” (Van Horne and Wachowicz, 2008, p.206)

“Lowering the level of investment in current assets, while still being able to support sales, would lead to an increase in the firm’s return on total assets. To the extent that the explicit costs of short-term financing are less than those of intermediate and long-term financing, the greater the proportion of short-term debt to total debt, the higher is the profitability of the firm.” (Van Horne and Wachowicz, 2008, p.206-207)

One interpretation of the relation between short-term interest rates, the period of payment payables with the returns of the firm: “Although short-term interest rates sometimes exceed long-term rates, generally they are less. Even when short-term rates are higher, the situation is likely to be only temporary. Over and extended period of time, we would expect to pay more in interest cost with long-term debt than we would with short-term borrowings, which are continually rolled over (refinanced) at maturity. Moreover, the sue of short-term debt as opposed to longer-term debt is likely to result in higher profits because debt will be paid off during periods when it is not needed.” (Van Horne and Wachowicz, 2008, p.207)

With regard to working capital in term of the level of its current liabilities and current assets, “these profitability assumptions suggest maintain a low level of current assets and a high proportion of current liabilities to total liabilities. This strategy will result in a low, or conceivably negative, level of net working capital. Offsetting the profitability of this strategy, however, is the increased risk to the firm. Here risk means jeopardy to the firm for not maintaining sufficient current assets to meet its cash obligations as they occur, and support the proper level of sales.” (Van Horne and Wachowicz, 2008, p.207)

2.3.2. Empirical Studies:

Empirical research studies also showed a relationship between the financial performance of a firm and its efficient working capital management. According to Krueger (2005), in order to rise funds available for expansion or decease financing expense, firms can reduce the amount of funds tied up in current assets. Showing that decreasing cost is tide up to the management of capital.

Numerous studies have been conducted in several countries and continents to investigate the relationship between working capital management and the firm's profitability. One of the basic studies has been made in Belgium by Deloof (2003), he conducted a valuable study using the data of 1009 firms in the Belgium market for the period of 1992-1996 after excluding many firms that their data are not complete or accurate. Thus, these 1009 were spread over several industries and sectors, firms in energy and water sector, and firms in (banking and finance, insurance, business services, renting, and other services) in order to make his sample more appropriate and verified for the research he conducted. Deloof (2003), measured profitability by gross operating income, which is defined as sales minus costs of goods sold, and is divided by total assets minus financial assets, and because for some firms in the sample the financial assets are mainly shares in other firms so it is considered as a major part of the total assets, that's why return on assets was not considered as a measure of profitability. Deloof (2003) considered in his study that when the company in its balance sheet has mostly financial assets, this will decrease the contribution of the operating activities on the return on assets, also the study did not consider profitability based on stock market valuation because only a few number of Belgian firms are listed on the stock exchange.
Deloof (2003) considered the cash conversion cycle as a comprehensive measure of working capital management, considering all its determinants which are, number of days account receivable, number of days accounts payable and number of days inventories, as independent variables. Additionally, Deloof (2003) considered (the natural logarithm of sales, sales growth, the financial debt ratio, the ratio of fixed financial assets to total assets) and variability of net operating income (divided by total assets minus financial assets) all of these as control variables in the regressions.

Deloof (2003) found in his empirical analysis using first the Pearson correlation that there is a negative relation between gross operating incomes on one hand, and the measures of working capital management (number of day's accounts receivable, inventories and accounts payable and cash conversion cycle) on the other hand. According to Deloof (2003), this fact is leading to another point which is the waiting time between the money spent on purchases of raw materials and the collection of sales of finished goods can be too long, and decreasing this waiting time will maximize profitability. However, Deloof (2003) found a shortcoming for this method because with this result, the negative relation means that profitability of a firm will decrease when the number of days accounts payable increases. The result means that when a company takes more time to pay its account payable it will profit less. That is neglecting one fact in the Belgian market which is

decreasing the time that the suppliers wait to get the payments from the firms could increase somehow the profitability, because Belgian firms often receive a substantial discount for prompt payment. However, Deloof (2003) stated that in Belgian financial statements, discounts received for prompt payment should not affect operating income because it should be looked as financial income.

Deloof (2003) applied also a regression analysis in order to find the exact effect of working capital management on the firm profitability, the study used the fixed effects model to estimate the firm profitability. The study also used the plain OLS-models, because it includes the variability of income in addition to all other variables that the fixed effect model already has included. In the first four layers of regression analysis that Deloof (2003) applied, basically using the fixed effects model, they concluded that in order to increase a firm profitability, managers can lower the number of day's accounts inventories and receivable. What led to this fact, is that the study found in the first regression a negative coefficient of the account receivables and it was highly significant and found gross operating income will decline in any increase in the number of day's accounts receivables. The same result with all other variables of the fixed effects model the coefficients were highly significant. In the second regression, Deloof (2003) found a significant negative relation between number of days inventories and gross operating income (p-value = 0.015). In his third regression analysis, Deloof (2003) found a negative and highly significant relation between gross operating income and accounts payable, while the fourth regression showed that the coefficient of the cash conversion cycle variable is negative but not significantly different from zero (p-value = 0.668).

Deloof (2003) argued in the end of his study that to some extent the negative relation between working capital management and profitability is explained as the profitability of a firm is effecting the working capital management not vice versa. That's because the negative relation between accounts payable and profitability is explained as the less profitable the firm is the more it needs to wait to pay its bills and payable. Moreover, according to Deloof (2003), the negative relation between inventory and profitability can be caused by decreasing sales which led to decrease profit and explained the high inventory in the stores. Alternatively, Deloof (2003) suggested that when customers need more time to determine the quality of a product they buy, that will lower profitability and explains the negative relation between days accounts receivables and profitability.

Deloof (2003) made it clear in his study that since most firms have a huge amount of their cash invested in working capital, thus, it normally explains that the way they make use of this working capital will highly affect the firm's profitability. Based on the significant negative relation that Deloof (2003) found between gross operating income and the number of day's inventory, accounts payable and accounts receivable of Belgian firms, Deloof (2003) stated that managers can make value for their shareholders by reducing the number of day's accounts receivable and inventories to reasonable minimum.

According to Deloof (2003) the negative relation between profitability and accounts payable showed, that firms will take longer time to pay their bills if they are less profitable.

In completely different continent which is Asia. Raheman and Nasr (2007) investigated a research about the effect of working capital management on the Pakistani firms. Raheman and Nasr (2007) selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange from different sectors of the Pakistani economy for a period of 6 years from 1999 to 2004. The reason that Raheman and Nasr (2007) were restricting to this period was the availability of data. The sample of Raheman and Nasr (2007) excluded any firms from the financial sectors, business services, renting and other services due to specific nature of their activities, but included other firms with data available regarding the number of days account payable, number of days inventories, number of days account receivable and operating income.

The study of Raheman and Nasr (2007) was concerning about the effect of several variables of working capital management including the Inventory turnover in days, average collection period, average payment period cash conversion cycle, all considered as independent variables, and net operating profitability of Pakistani firms considered as the dependent variable. The current ratio were considered as a traditional measure of liquidity, while the size of the firm (natural logarithm of sales), debt ratio and financial assets to total assets ratio all have been used as a control variables. According to Raheman and Nasr (2007) choosing all these variables were important because all of them have a relationships that affect working capital management in one way or another. Raheman and Nasr (2007) expected that there is a negative relationship between net operating profitability and the measures of working capital management.

In order to prove this relationship, Raheman and Nasr (2007) used the panel data regression analysis of cross-sectional and time series data and used two types of data analysis, which are the quantitative (Pearson correlation model, Regression analysis) and the descriptive using SPSS.

After applying the descriptive analysis the study of Raheman and Nasr (2007) showed that the descriptive statistics for the non-financial 94 Pakistani companies for a period of 6 years from 1999 to 2004 and for total 564 companies year observation, the result were as the following; the value of profitability could deviate from its mean for both sides by 11.5%, because the mean value of net operating profitability was 13.3% of total assets, and its standard deviation was 11.5%, also the maximum value of the net operating profitability was 68.4% for a company in a year while the minimum was -46.6%.

Additionally Raheman and Nasr (2007), found that the maximum time a company could take to convert its inventory into sales is 958 days which is a very large number indicating

a long time. Additionally, they found that the minimum time taken by a company to also convert its inventory into sales is 0.25 day which is totally unusual.

The study of Raheman and Nasr (2007) used the natural logarithm of sales as a control variable to find the relationship between the firm size and its profitability and it found that the mean value of log of sales is 20.83 while the standard deviation is 1.70. In order to check the liquidity of the firms, Raheman and Nasr (2007) used the typical measure of liquidity which is the current ratio and it showed the following; the average current ratio for Pakistani firms is 1.53 with a standard deviation of 1.83.

After analyzing the relationship between the debt financing and the profitability of a company which has been found by applying the debt ratio as a control variable, the descriptive statistics according to Raheman and Nasr (2007) showed that the average debt ratio for the Pakistani companies is 73% with a standard deviation of 43%. With regard to the ratio of fixed financial assets to the total assets of Pakistani firms, the results showed that the mean value of this ratio is 4.3% with a standard deviation of 7.7, and the maximum portion of assets in the form of financial assets for a certain company is 55% and the minimum was 0.00.

To determine the relation between the working capital management and the company profitability using the correlation analysis, the study of Raheman and Nasr (2007) showed a negative coefficient of -0.165, with a p-value of 0.00 and because the result is significant, it indicates that if the average collection period increases, it will negatively affect the profitability so it will decrease. Raheman and Nasr (2007) found the same result in term of inventory turnover with correlation coefficient of 0.214 and p-value of 0.00 and in term of payable turnover in days also it has a highly significant negative correlation coefficient of -0.158 and a p-value of 0.00 so it indicates that the less profitable the company is the more it will wait to pay its bills. Raheman and Nasr (2007) also considered the cash conversion cycle as a comprehensive measure of working capital management and they found that it also has a negative and significant correlation coefficient of -0.094 and p-value of 0.026, so the higher the profitability of the firm the less time it takes with its cash conversion cycle. Raheman and Nasr (2007) explained that, the more efficient the company is in managing those measures of working capital management the more they are increasing their profit.

After applying several regression models among them the general least squares method with cross section weights based on Pakistani firms sample, Raheman and Nasr (2007) accepted their hypothesis and they found in general the same results that working capital management essentially affects the profitability of the company. They also found that the more effectively the firm manages its current assets and current liabilities and funding these current assets, and proper management of cash, accounts payable, receivables and inventory that all will ultimately enable the company to make more profit. In addition to that, Raheman and Nasr (2007) found that profitability and liquidity they go in opposite

directions and it is essential to keep a trade-off between those two important objectives of the company. Additionally, Raheman and Nasr (2007) explained that increasing debt financing will cause a decrease in the profitability of the company regarding financial costs. Moreover, Raheman and Nasr (2007), pointed that the size of the firm goes with the same direction of its profitability so the larger the company is (in term of log of sales) the higher the profit it can make.

Raheman and Nasr (2007) results are in confirmation with (Deloof 2003) in term of finding a strong negative relationship between working capital management measures and a corporate profitability.

In Africa, particularly Nigeria, Barine (2012) conducted a research by taking a sample of 22 quoted corporates listed on the Nigerian Stock Exchange from eight different economic sectors (9 from banking, 1 from petroleum, 2 from healthcare, 2 from breweries, 1 industrial products, 5 from food and beverages, 1 in building materials and 1 from conglomerates) for the year 2010 considering an improvement in working capital positions caused by improved access to bank funding for getting a gross working capital for the quoted manufacturing companies, and an improved liquidity for banks, using the annual report data.

The study of Barine (2012) used the one-tailed test to determine whether the return on gross working capital is greater than the cost of gross working capital of sampled quoted firms. Barine (2012) analyzed the collected data and found that the standard deviation for the difference between means of the population is 3.99 and after applying t-test, it indicated that returns on improved gross working capital investment positions of the sampled Nigerian firms is lower than the cost of gross working capital investment of these corporates which shows inefficiency in the use of their gross working capital and that it has a negative impact on their profitability.

The negative results that the equation of working capital returns and costs, show low levels of returns to shareholders. Barine (2012) suggested that even though the gross working capital of the quoted firms in Nigeria is in an improved position, but they still depends more on short term debts and liabilities for funding their short term capital and that leads to much more cost and decreases the profitability of them and that was evidenced after 50% of the sampled corporates has kept a negative working capital positions.

The study of Barine (2012) also showed that the actual profits of quoted corporate in Nigeria are high, but on the other hand the costs of working capital was also higher than the percentage of operating profit to gross working capital. Thus, the study suggested that improving the positions of gross working capital of the quoted Nigerian firms did not engage in improving the profitability of these companies.

Barine (2012) suggested that working capital decisions are giving a classical example for the nature of financial decision making in term of risk and return. In addition to that, Barine (2012) stated that increasing the working capital of a firm will decrease the risk of illiquidity and will ultimately increase profitability.

Barine (2012) also pointed that the well management needs a trade of risk of and returns for financial efficiency of company's activities, however, it did not evidence from results of the quoted Nigerian firms.

In order to take a broader look on Africa, with several countries within the African continent, Ukaegbu (2014) conducted a research about the significance of working management in determining the profitability of a firm. Ukaegbu (2014) used a secondary data in form of financial statements, obtained from Orbis database to investigate the relation between working capital management and profitability. Ukaegbu (2014) selected the data of 102 large sized manufacturing firms in the developing economies in South Africa, Nigeria, Egypt and Kenya for the period from 2005 to 2009. Ukaegbu (2014) excluded firms in the financial sector, insurance, business services renting and other services from the sample. The choice that Ukaegbu (2014) made of these several countries is representing the three different groups as per United Nation conference on trade and Development (UNCTAD) classification.

To examine the relation between working capital management and company's profitability, Ukaegbu (2014) considered profitability in form of gross operating profit as the dependent variable while the working capital measures including number of days accounts payable, number of days inventories, the number of days accounts receivables and cash conversion cycle were considered as the independent working capital variable. As a control variable, Ukaegbu (2014) used the logarithm of assets to measure the size of the company.

In order to make sure if one regression is enough for every country, the study of Ukaegbu (2014) used Chow test to test for structural stability across the four countries, and in the aim of testing the stationarity of the variables, the study used panel unit root test across the four countries, and there was no evidence to suggest non-stationarity of the variables.

The finding of the descriptive statistics of 102 non-financial firms across Egypt, Kenya, Nigeria and South Africa for a period of five years from 2005 to 2009 according to Ukaegbu (2014) revealed that companies in Kenya were more profitable than similar companies in the other three countries that the sample took with a mean value of 40%. However Ukaegbu (2014) found that Kenya was ranked behind South Africa and Egypt regarding industrialization level. Additionally, the descriptive statistics of Ukaegbu (2014) study also showed that there are some companies in South Africa and Egypt which are more profitable with a maximum gross operating profit of 68% and 56% respectively and the

minimum level of profitability was 5% for Egypt and -25% for South Africa, -56% for Nigeria and -59% for Kenya.

Ukaegbu (2014) also found that it takes 13-day cash conversion cycle as a mean value for companies in Kenya which showed their efficiency in working capital management compared to companies in Egypt which they got 27 days as a mean value of cash conversion cycle. Which was not better than the companies in Nigeria and Kenya that they took longer time to pay their accounts payable than the time they took to collect their receivables from their customers. Ukaegbu (2014) suggested that in more developed countries like South Africa and Egypt there are a higher level of investor protection that could be attributed to the level of corporate governance and capital market development. Ukaegbu (2014) connected the board size of the firm with its governance. The analysis made by Ukaegbu (2014) suggested that firms in Egypt and South Africa are large in comparison to those in Nigeria and Kenya, and he found that the board size and firm size are positively related to each other. Moreover, Ukaegbu (2014) suggested that the need to information will increase according to firm scale and its complexity.

There was an evidence from the data analysis in Ukaegbu (2014) study that there is an inverse relationship between the profitability of the firm and the number of days a company takes to collect cash from its customers across all the four countries. In addition to that, Ukaegbu (2014) found that the inventory turnover ratio which measures the speed of turning the stock into sales is positively correlated with profitability in South Africa, Kenya and Nigeria. Ukaegbu (2014) suggested that low inventory turnover ratio shows an inefficient management of inventory and the faster the inventory sells, the less the funds of the firm are tied up. Ukaegbu (2014) found that in Egyptian firms, the relationship between accounts payable and profitability is positive and it's the inverse for firms in the other countries. The finding of Ukaegbu (2014) demonstrated that the more time the firm in Egypt takes to settle its accounts the more profitable it is. On the other hand, according to Ukaegbu (2014), the less time the companies in Nigeria, Kenya and South Africa take to settle their accounts, the more profit they can make. Ukaegbu (2014) stated that these differences can be attributed to the good relations with suppliers which could be useful in cutting deals in term of delivery on time and discounts.

Ukaegbu (2014) proved that there is an inverse relationship between the cash conversion cycle in measuring working capital management and the profitability of firms in all four sampled countries. This finding of Ukaegbu (2014) indicates that the firm that can collect its cash quickly and make sure that they can sell their inventory as soon as possible while they take more time to pay their suppliers are likely to make more profits.

Ukaegbu (2014) found that there is a positive correlation between the size of the firm and its profitability, so the more the firm can grow in term of size the more it is able to make profit. Ukaegbu (2014) attributed this relation to the fact that larger firms are the more

able to diversify their investments, apply good techniques and employ experienced managers.

Ukaegbu (2014) suggested that management of receivables is a practical problem and it is essential for the firm as well, since companies can find their liquidity under extensive strain if the level of their accounts receivable is not well regulated. Thus, according to Ukaegbu (2014), not well managed receivables could make an excess levels that could lead to reducing cash flows and ultimately will result in poor liabilities management which will decrease the firm's profitability.

Ukaegbu (2014) stated that the best way of determining the liquidity of a company is by the cash conversion cycle since it contains statements of income statement and financial position to create time line measures. Additionally, Ukaegbu (2014) suggested that growth in GDP, changes in interest rate and industry averages could affect working capital management.

Back to Asian markets, Sharma and Kumar (2011) applied a research to determine the effect of working capital on profitability of Indian firms. The study of Sharma and Kumar (2011) took a sample consists of 263 non-financial BSE 500 companies listed at the Bombay Stock Exchange (BSE) for the period of 9 years from 2000 till 2008. Sharma and Kumar (2011) sampled firms covered 15 industries with a full annual data of eight variables, and due to the different nature of their activities, firms in the banking, financial and information technology (IT) industries were excluded from the sample that has been taken in this study. In addition to that, all firms with insufficient data for the study period were also excluded from the sample. All data of the sampled firms of Sharma and Kumar (2011) study, were taken from the Capitaline and CMIE- Prowess databases. Additionally, Sharma and Kumar (2011) used OLS multiple regression tool of four equations in order to evaluate the data that have been sampled.

The variables that Sharma and Kumar (2011) have considered in order to examine the effects of working capital management on the profitability of Indian firms were considered as; profitability was measured as the Return on Asset (ROA) and it was used as the dependent variable in the study, ROA measured as the ratio of earnings before interest and tax to total assets. As a measures of working capital management, number of days accounts receivable (AR), number of days account payable (AP) and number of days inventory were considered as the independent variables in the research of Sharma and Kumar (2011). Accordingly, Sharma and Kumar (2011), the cash conversion cycle was considered as a comprehensive measure of working capital as it shows the waiting time between the expenditures for purchases of raw material and the collection of finished sold goods as the study stated. As a control variable, Sharma and Kumar (2011) used the size of the company measured as the natural logarithm of assets, the growth in its sales measured as (Sales1 – Sales0)/Sales0, current ratio measured as current assets to current

liabilities (CA/CL) and company leverage (LEV) measured as the ratio of total debt to total assets.

The descriptive statistics of the variables that have been used in Sharma and Kumar (2011) research showed that the return on assets (profitability) had a mean value of 197 percent with a standard deviation of 128 percent. The mean values of number of account receivables and number of accounts payable were 471 days and 683 days respectively. While the mean value of cash conversation cycle of all firms together was 450 days. On average the sales growth of all firms was almost 248 percent annually, while the current ratio ranked 14.53 as a mean value during the period of the study (2000-08).

Sharma and Kumar (2011) made a correlation matrix of the variables that have been used, and it showed that there is a negative correlation between the profitability in term of return on assets and the number of day's inventory as well as number of days of accounts payable. While between return on assets and cash conversion cycle as well as number of days accounts receivable there was a positive correlation. With regard to correlation between ROA with the firms' size, growth and leverage Sharma and Kumar (2011) found that they were negatively correlated, while positively correlated with the measure of short term liquidity which is current ratio.

According to Sharma and Kumar (2011) the analysis of the first regression equation with regard to the firm profitability and number of day's inventory reveals that there is a negative relationship between the Indian firm's size, leverage, growth and inventory with the profitability in term of return to assets which is considered as dependent variable in this study. While this result of Sharma and Kumar (2011), it contrasts with what generally found from several international studies and known from the theory of corporate finance that there is a positive relation between profitability and the size, growth and inventory of a company, the study stated. However, Sharma and Kumar (2011) found that there is a positive relationship between the conventional measure of liquidity (current ratio) and return on assets of Indian companies.

The second regression equation Sharma and Kumar (2011) applied was on the relationship between the firm profitability and the number of day's accounts receivables. The analysis found a positive relationship between Indian companies' profitability and number of days of accounts receivables, which the result was also in contrasts with the theory of corporate finance which says that the lower the number of days of accounts receivables the higher the profitability of a firm. However, the study showed that with the results found from the coefficient value of number of days of accounts receivable shows that one day increase in the number of days of account receivables will be associated with an increase by 0.038 percent in the return on assets for the Indian firms.

With regard to the effect of managing the number of days of accounts payable on the profitability of the Indian firms, the results of the analysis of the third regression equation

that Sharma and Kumar (2011) applied, showed that there is a negative relationship between number of days of accounts payables (AP) and the firm profitability in term of return on assets. Since the coefficient for days of accounts payable was found negative and confirms the negative correlation with Indian companies' profitability. Sharma and Kumar (2011) suggested that these results make an economic sense because the more time it takes as a payment period the higher the amounts of fund that can be reserved to be used for different operations and lead to make more profits.

As a combined effect of all the three variables was shown in studying the relationship between profitability and cash conversion cycle (CCC), which was shown in a positive value of 0.006 of coefficient value for CCC. Sharma and Kumar (2011) explained that this positive value means that the lower the cash conversion cycle the less the profit that the Indian company could generate which is also in contrast with the theory of corporate finance that states the lower the cash conversion cycle the more the company is profitable. However, Sharma and Kumar (2011) found the P-value of the test was 0.195 which indicates that these results are not significant.

Sharma and Kumar (2011) suggested that these strange results with regard to the relationships in certain cases that has been found in the Indian firms could be very useful for decision makers or users who participate in managing the short term fund.

Sharma and Kumar (2011) also pointed that the sustainability of a firm depend on its proper management of the tradeoff between investment in log-term and short-term funds. In addition to that, the research of Sharma and Kumar (2011) suggested that the tradeoff between profitability and liquidity is the best way of managing working capital.

Another study was made in Asia, specifically in Iran and was conducted by Jafari et al. (2014). Their research aimed to examine the relationship between the effects of working capital management on firm's bankruptcy probability. Jafari et al. (2014) investigated the data of 54 firms listed in Tehran Stock Exchange during the period from 2002 to 2010 using Altman model to indicate the relationship using SPSS and Excel to process the data.

The selection of the sample in Jafari et al. (2014) study, mainly excluded financial institutions and firms working in (Investment, intermediation, insurance and banking) and also excluded any firm with insufficient data needed for the study.

Jafari et al. (2014) hypothesis was stating that there is a significant relationship between working capital management and firm's bankruptcy probability listed in Tehran Stock Exchange. Jafari et al. (2014) considered bankruptcy based on Altman model as the dependent variable, and determined the following indicators as an independent variable; cash conversion cycle measures to identify working capital management the first measure is Debtor conversion period calculated as [Average of Collection Period from Debtors = Average of Receivable Accounts / (Sales/365)]. The second measure is Inventory Conversion Period and it was calculated as [Inventory Conversion Period = Inventory

Average/ (Cost of Goods Sold/365)]. The third indicator Period of Debits Postponement which was calculated from this ratio [Period of Debits Postponement = Payable Accounts Average/ (Cost of Goods Sold/365)]. In order to generally evaluate the cash conversion cycle they considered this equation [Inventory Conversion Period – Period of Debits Postponement + Cash Conversion Cycle = Average of Collection Period from Debtors]. The study of Jafari et al. (2014) also considered Leverage ratio, firm size, returns of overall assets, cash changes, retained cash before the end of the period, standard deviation of firm's return and the rate of risk-free return all as control variables for the research.

The descriptive statistics of Jafari et al. (2014) study using central index such as the mean, median and indexes of standard deviation distribution skewness and kurtosis showed mainly that the mean of the cash conversion cycle of the sampled firms listed in Tehran Stock Exchange has a value of 206.56 days with a standard deviation of 138.10. The mean value of the Return on Assets has a value of 0.29 with a standard deviation of (0.2928). The descriptive statistics of the research found that the skewness and kurtosis has values mostly close to zero and these indicate the symmetry of research variables and their closeness to normal distribution.

To analyze the bankruptcy status of the firms and classify firms according to health status, between bankruptcy and bankrupt status, Jafari et al. (2014) used Altman Z-score Model. The results of Jafari et al. (2014) analysis showed that around 24% of 432 firms of the study sample, considering (54 firms in 8 years = 54*8) is consisted of bankrupt firms, and 69% is consisted of firms with intermediate status (between bankruptcy and health) and the firms with health status, constituted the remainder (7%).

Jafari et al. (2014) implemented regression model to estimate the relationship between working capital and probability of a firm's bankruptcy and it found that there is a negative relationship between working capital management and the risk of bankruptcy. Jafari et al. (2014) explained that the longer the cash conversion cycle, the higher the risk of bankruptcy will be. The research of Jafari et al. (2014) also proved that there is a significant relationship between variables of working capital management and the risk of bankruptcy with 95% confidence level to confirm the research hypothesis.

Jafari et al. (2014) also found that amount of cash maintenance is positively affecting the risk of bankruptcy but it is not statically significant, while cash changes variable has a negative effect on the risk of bankruptcy, however, it is also not statically significant. The return of assets variable positively affecting the risk of bankruptcy and it is significant, while the firm size variable has a negative effect on the risk of bankruptcy and it is significant. Jafari et al. (2014) also found that there is a significant negative relationship between the leverage ratio and the risk of bankruptcy of the firm.

Jafari et al. (2014) suggested that their results are consistent with the explanation that, inefficient working capital management means the funds which are included in inventory

or the funds that customers are still payable to the firms and it is not possible to be used for paying liabilities of the entity. Jafari et al. (2014) also suggested that too much investments in fixed assets and inventories make funds restriction and its unavailability to settle other liabilities which make the firm tackled with the risk of instability and make the firm's bankruptcy probability higher. Additionally, it will decrease the efficiency of the daily operations of the firms listed in Tehran Stock Exchange.

Considering another country in the same area, Karadagli (2012) investigated a research in Turkey about the effects of working capital management measured by cash conversion cycle and net trade cycle on the firm performance measured by profitability. In addition to that the study of Karadagli (2012) examined the differences between the profitability effects of working capital management for small and medium enterprises (SMEs) and for bigger firms with the aim to determine if the net trade cycle is an efficient substitute for cash conversion cycle as a measure of working capital management.

Karadagli (2012) used the data of 169 Turkish listed firms among which 72 of them are SMEs, taking the data of the period from 2002 to 2010 by using pooled panel analysis for the annual reports.

In order to measure the working capital management efficiency the study of Karadagli (2012) considered the cash conversion cycle and the net trade cycle. For measuring profitability, Karadagli (2012) considered two measures which are the accounting and the market based performance, for addressing the operational efficiency. Operating income is used as an accounting based performance measure. Karadagli (2012) introduced a unique feature which is considering the stock returns as a proxy for the profitability of the company, and as the research mentioned that past empirical research used mainly the accounting based profitability measures. Karadagli (2012) also considered the firm sized measure as the natural logarithm of total assets as the control variable. To control the economy wide fluctuations, Karadagli (2012) used GDP growth rate and the financial debt ratio where used as proxy for financial leverage. In order to control the industry effects, Karadagli (2012) used two-digit industry codes assigning to firms based on ISE industry classification.

Karadagli (2012) applied the pooled panel analysis model and the study suggested from the results shown that decreasing the cash conversion cycle and the net trade cycle will increase the operational efficiency of companies with 1% significance level. The research of Karadagli (2012) also indicates that there is a positive relationship between the impact of cash conversation cycle and net trade cycle on the company performance, measured by stock market returns with a significance level of 1%. On the other hand, Karadagli (2012) found that when the sample is divided into SMEs and large enterprise the results of the analysis keep a positive relationship between Cash conversion cycle and Net trade cycle with stock market returns. While for bigger firms these relationships become negative, however, not statistically significant conventional levels.

Karadagli (2012) suggested for future researches, that generalization without taking into account the potential differences that may exist with the relationship of working capital management effects on profitability between SMEs and larger firms could lead to wrongful or misleading results.

Additionally, Karadagli (2012) found that the market seems not considering the working capital measures for bigger firms while for SMEs, investors put a positive value to increase the cash conversion cycle and net trade cycle. Karadagli (2012) also suggested that managers can use the net trade cycle as a confidential substitute for cash conversion cycle.

Napomech (2012) investigated a research in Thailand to examine the effects of working capital on the profitability of Thai listed firms. Napomech (2012) sampled the data of 255 firm listed on the Stock Exchange of Thailand for the three years period of 2007 through 2009. Taking the yearly data on sales, cost of goods sold, total assets, financial assets, inventory conversion period average collection period, payables deferral period, cash conversion cycle and debt ratio. Napomech (2012) used the regression analysis based on panel model to process the data collected. The 255 firms that Napomech (2012) sampled were covering seven industries in Thailand which distributed like this: 67 firms in industrials, 21 firms in consumer products, 26 firms in technology, 34 firms in agriculture and food, 15 firms in resources, 44 firms in construction and building materials and 48 firms from services.

In order to examine the impact of the cash conversion cycle and its constituents on profitability, the cash conversion cycle, the receivables collection period, the inventory conversion period, and the payables deferral period were regressed against gross operating profit. According to Napomech (2012) the dependent variable that the study used, to test this relation was the gross operating profit (GROSS) calculated by subtracting the cost of goods sold (COGS) from total sales and dividing the result by total assets minus financial assets. The study of Napomech (2012) used GROSS indictor because it is more closely related to the cash conversion cycle and its constituents, and various measures of working capital management. The study of Napomech (2012) also used the cash conversion cycle calculated as inventory conversion period plus receivables collection period minus accounts payables deferral period as the independent variable of the research.

The descriptive statistics of Napomech (2012) sample showed that on average, 5.94% of the total assets of the firms were financial assets (including participation in other subsidiaries). The mean of total sales was 17,889.57 million baht, and has a median value of 2,777.51million. Napomech (2012) suggested that these results showed that the data of firm size, which was proxied by logarithm of sales in this study, were quite volatile. Additionally, the study of Napomech (2012) found that on average the operating profit of the firms included in this research were 20.75%, and the inventory takes averagely 124.34

days to be sold with a median value of 43 days. The average collection period had a mean value of 61.18 days with a median value of 52 days. The payable deferral period were on average 52.15 days with a median value of 37.12 days. Overall the cash conversion cycle on average took 133.73 days were found in this study with a median value of 59.03 days.

The Pearson correlations of the variables included in the regression model in Napomech (2012) research showed that, the gross operating profit has a negative correlation with the variables of inventory conversion period, receivables collection period, payables deferral period, and cash conversion cycle. Napomech (2012) suggested from this result that, increasing the speed of selling products, collecting receivables form clients quicker and paying faster payables to suppliers, all will increase the profitability of the company.

The multiple regression models that Napomech (2012) applied, also found that there is a negative relationship between the cash conversion cycle variable and profitability, with a negative and highly significant coefficient of the cash conversion cycle variable and highly, showing that an increase in the cash conversion cycle of 1 day will be associated with a decrease of 0.006 in the gross operating profit. Additionally, the regression fund that the bigger the company (measured by the natural logarithm of sales) the higher the gross operating profits with very high level of significance.

More finding from the regression analysis that Napomech (2012) implemented is that the gross operating statistically decrease as the debt ration increase. Positive relationship exited between the fixed financial assets and the gross operating profits, but it is not significant. Moreover, Napomech (2012) found that there an industry-type effect on the profitability showing that industrials industry has lower gross operating profit than companies in the comparison industry, service industry, if other things held constant.

Napomech (2012) also found that, a negative relation existed between gross operating profit and inventory conversion period. Therefore, the study suggested that by speeding up the inventory conversion period, the profitability of the company can be improved, since more working capital will be available for reinvestment. At the same time the regression model indicated a negative relationship between gross operating profit and receivables collection period. Napomech (2012) suggested that these results showed that by shortening the credit period the firm give to customers the profitability of the company will be increased. On the other hand, Napomech (2012) found that between gross operating profit and accounts payables deferral period there is negative relationship. However, this result was not statically significant, suggesting that this result could be explained as less profitable firms take longer time to pay their suppliers.

In another country, Makori and Jagongo (2013) in their research, they analyzed the effect of working capital management on the manufacturing and construction firm's profitability listed in Nairobi Securities Exchange (NSE) in Kenya.

Makori and Jagongo (2013) collected data from NSE handbooks and the Kenya Capital Markets Authority, while the required financial data of the listed firm were taken from the firms' annual reports. The sample data covered the period of 2003 to 2012. The study obtained a balanced panel dataset of 100 firm year observation, with observation of 10 firms between 2003 and 2012.

Makori and Jagongo (2013) measured the profitability of manufacturing and construction firms in Kenya by Return on Assets (ROA), calculated as the ratio of earnings before interest and tax to total assets. Return on Assets were considered as the dependent variable in the study. For working capital management measurement Makori and Jagongo (2013) considered all of the average collection period (ACP), the inventory conversion period (ICP), the average payment period (APP) and the cash conversion cycle (CCC) as the independent variables of this research. Makori and Jagongo (2013) used also all of the size of the firm, the growth of the firm sales, firm leverage and current ratio as control variables for the research.

Makori and Jagongo (2013) used the balanced panel data of five manufacturing and construction firms listed in Nairobi Securities Exchange, using Pearson's correction and Ordinary Least Squares regression models were used to examine the relationship between working capital management and firm's profitability.

According to Makori and Jagongo (2013), the descriptive statistics of the variables for 100 firms' year observation showed that the return on assets has a mean value of 15.7% with a 10.8% value of standard deviation. The collection period had a mean value of 56.535 days with 32.476 days as a standard deviation. The inventory conversion period on average had a value of 93.851 approximately three months, with 47.652 days as a stranded deviation. The statistical analysis of Makori and Jagongo (2013) study also showed that on average the companies used 96.503 days to pay its creditors with a 49.846 days as a value of standard deviation. Totally the cash conversion cycle had a mean value of 53.883 days. In addition to that, Makori and Jagongo (2013) found that on average the firm had a size of 15.668 measured by the natural logarithm of the firm total assets. The leverage ratio had a mean value of 43.9% lagged by total assets. On average, firms had a sales growth value of almost 16.1% annually.

The Pearson correlation analysis of Makori and Jagongo (2013) research showed, that Return on Assets is had a negative relation with average collection period, cash conversion cycle and Leverage ratio. Makori and Jagongo (2013) explained the negative relation between Return on Assets and average collection period, that the lower the time taken by clients to pay their bills, the higher cash available to refill the stock and that will lead to higher sales which ultimately will increase the company's profit. While, the correlation model in Makori and Jagongo (2013) study showed that there is Positive relationship between Return on Assets and each of (Inventory conversion period, Average payment period, sales growth, current ratio and firm's size).

Makori and Jagongo (2013) explained the positive relationship between ROA and APP by the fact that taking more time to pay for suppliers will give the company more cash available to buy more inventory for sale. Thus, that will boost the sales of the company and accordingly will increase its profitability. While Makori and Jagongo (2013) suggested that the positive relationship between ROA and the firm size can be explained by the fact that the bigger the company is, the higher its profit will be, comparing to small companies due to the firm ability to get use of its economics of scale.

Makori and Jagongo (2013) found the correlation coefficient were not significant for the relation with each of average collection period, sales growth and current ratio. While it was significant for each of the inventory conversion period, average payment period, cash conversion cycle, firm leverage and company size.

Makori and Jagongo (2013) conducted the pooled OLS regression analysis to determine if there is a significant relationship between working capital management and profitability. Thus, the regression analysis of Makori and Jagongo (2013) found that between average collection period and profitability there is no significant relationship. Accordingly, the study suggested that short Average Collection Period is good for interpreting the financial success of listed construction and manufacturing companies in Kenya and It is not an essential factor to be considered when making a decision to increase the profitability. Additionally, Makori and Jagongo (2013) found that the current ratio has no significant impact on profitability.

The regression model that Makori and Jagongo (2013) used, showed that there is a significant positive relationship between Inventory conversion period and profitability with P-value= 0. Additionally, Makori and Jagongo (2013) found that the coefficient of average payment paired is highly significant positive relationship between APP and profitability in term of ROA. Additionally, the research of Makori and Jagongo (2013) indicates that the regression coefficient was showing a significant negative relation between cash conversion cycle and Return on Assets.

Makori and Jagongo (2013) suggested that in order to create value for shareholders, managers can increase the accounts payment period and inventories to a reasonable maximum and decrease the number of day's account.

Another valuable research in the Middle East, specifically about the Jordanian market, was made by Abuzayed (2012) who conducted a research regarding the working capital management and firm's performance in emerging markets, taking Jordan as a case study. Abuzayed (2012) collected data for the period of 2000 to 2008 from the listed companies in Amman Stock Market. Abuzayed (2012) excluded the firms working in financial sectors, or brokerage, insurance and real estate due to their special nature of activities. The sample included 52 non-financial company with 468 observations in total. Abuzayed

(2012), enhanced the usual way of studying the relationship by determining the effect of working capital management on firm's market value.

The research of Abuzayed (2012) measured the performance by two variables which were considered as the depended variables. The first variable is, gross operating profit GOP (profitability) calculated as (sales – cost of goods sold divided by total assets minus financial assets). The second variable is, Tobin's Q (TQ) for measuring the market valuation which are calculated as (equity market value plus liability book value divided by equity book value plus liability book value).

The independent variables that Abuzayed (2012) considered are number of days account receivables (DAR) which were calculated as [(accounts receivable/365)/sales]. Number of days inventory (DI) which were calculated as [(inventories/365)/cost of sales]. Number of days account payable (DAP) which were calculated as [(accounts payable/365)/purchases], and totally cash conversion cycle (CCC) which were calculated as (number of day's accounts receivable + number of day's inventory – number of day's accounts payable). Abuzayed (2012) also considered six control variable which are: the size of the firm calculated as (the natural logarithm of sales), the sales growth (GR), the leverage (LEV) which was calculated as (the financial debt/total debt), the fixed financial assets to total assets (FFA), the variability of net operating income (VNOI) and the growth in gross domestic products (GDP).

Abuzayed (2012) analyzed all the variables using Pearson correlation and OLS regression analysis. Additionally, the study applied the dynamic panel of the generalized method of moment GMM. It also used two groups of models one to regress the accounting profitability for the firm on the working capital management variables, and the second one to the firm valuation were considered as the measure of the firm's market performance instead of profitability.

According to Abuzayed (2012) the descriptive statistics of the study showed that on average the cash conversion cycle takes 204.52 days, while on average, companies collected payments on sales after 102.94 days. The inventory took an average of 181.87 days to be sold, while companies took an average of 80.29 days to pay their suppliers. The sales growth has a mean value of only 17.05 percent, with widespread between -86.64 and 491.69% indicating high level of variation of companies growing policies.

According to Abuzayed (2012) the correlation analysis the study applied showed, that there is a significant correlation between the net operating profit and the cash conversion cycle as well as each of its three components (days of accounts receivables, days of inventory and days of accounts payable). However, the study of Abuzayed (2012) found that the correlation between the GOP, CCC, DAR and DI were positive. The study explained that the pervious result means that companies with higher profits has less efficient working capital management. Abuzayed (2012) stated that this positive correlation is contradicted with the view that the less the period between producing and

selling the higher the profit the company could make. While the study also suggested an alternative interpretation could exist in the case of Jordan where access to external finance is limited in such environment. Thus, trade credit is a significant substation source of financing.

On the other hand, Abuzayed (2012) found a negative and significant correlation between DI and TQ of (-0.115) showing as the study suggested that investors in the financial market are still emphasizing on the managerial skills in managing companies inventories and consider the larger the cash conversion cycle the lower the efficiency of liquidity management of firms. While there was a negative relationship between the debt ratio and both of firm's profitability and market value. As the study suggested that the negative relation is due to the high risk it appears that the listed company are not taking an advantage of financial debt to lower their cash conversion or even get more profit.

The regression analysis models that Abuzayed (2012) applied supported the result of positive correlation between the cash conversion cycle and the gross operating profits where more profitable companies have higher conversion cycle showing low efficiency in managing working capital by these firms. While the regression analysis showed a negative relationship between accounts payable and profitability, suggesting a longer period of time the company takes to pay its bills when it's less profitable.

On the other hand, according to Abuzayed (2012) the regression results showed that there is a significant positive relationship between number of day's inventory and profitability, indicating the fact that more inventory will lead to more sales and ultimately higher profitability. Additionally, the results showed a positive relationship between day's accounts receivables and profitability.

According to Abuzayed (2012) there was a positive correlation between cash conversion cycle and firms leverage, suggesting that the longer the cash conversion cycle of the firm the more it needs an external funds, which leads to a higher borrowing cost, ultimately lower profitability. Abuzayed (2012) also found that the larger the firms are and the higher the sales growth they make and the more they have a volatile operating income, thus more significantly they can make profit.

According to Abuzayed (2012) the effect of working capital management on the firm's performance when TQ used as an indicator of the market valuation, the analysis showed that cash conversion cycle in negatively affecting the requirements for working capital of companies. The result shows that the more efficient the working capital management is the more the market value of the firm will be, however, the results were not significant. Abuzayed (2012) found that all the components of the cash conversion cycle are not significantly affecting Jordanian firms' profitability, while the reason could be due to the lack of enough transparency which affects the inventories decisions.

Caballero et al. (2014) investigated a research on a sample of 258 non-financial firms from the United Kingdom for the period of 2001-2007 with (1606 observations), to examine the relationship between working capital management and corporate performance. Caballero et al. (2014) used the net trade cycle (NTC) as a measure of working capital management, and they regressed the corporate performance against the net trade cycle (NTC) and its square (NTC^2). Caballero et al. (2014) also considered some control variables that also have an effect on the company's performance which are: the company size (SIZE) calculated as the natural logarithm of sales, leverage (LEV) accounted by the ratio of total assets, opportunity growth (GROWTH) measured as the ratio (book value of intangibles assets/total assets), and return on assets (ROA) measured as the ratio (earnings before interest and taxes over total assets).

According to Caballero et al. (2014), the t-test that they implemented, showed that the mean NTC of their sample was (56.48) and the mean NTC of the non-financial quoted firms from United Kingdom was (54.85) which shows that there is no significance differences for the period of analysis with p-value of 0.7808. Moreover, between the mean of the market to book ratio of their sample which was equal to (1.49) and the mean of the market to book ratio of the non-financial companies quoted from the United Kingdom which was equal to (1.48) the test showed that also there is no significance differences.

The descriptive statistics for the firm performance, net trade cycle and the control variables according to Caballero et al. (2014) showed that, on average the market to book ratio has value of 1.48, with median value of 1.30. The net trade cycle had a mean value of 56.47 days with a median value of 52.29 days. Additionally, the debt financing on average was 56.47% of the total assets, and the growth opportunities ratio on average was 0.21, while the return on asset was kind of low with a mean value of 5.59% and median value of 6.87%.

Caballero et al. (2014) used the formal text to make sure that this test analysis does not include the problem of multicollinearity. Therefore, Caballero et al. (2014) measured the variance inflation factor (VIF) for every independent variable in their models, and they found that the largest VIF value was 2.87 (far from 5) which makes sure that the problem of multicollinearity does not exist in their sample.

The results of Caballero et al. (2014) analysis showed that there is a high statistically significant U-shaped inverted relationship between the firm performance and working capital. Moreover, the same kind of relationship was found with every component of the net trade cycle which are (accounts receivable to sales ratio, accounts payable to sales ratio and inventories to sales ratio). Caballero et al. (2014) suggested that this finding means that when the firm has an ideal level of investment in its working capital then it will balance expenses and benefits which ultimately maximize the company's performance.

Caballero et al. (2014) pointed that their findings are in consistent with the view that at lesser level of working capital, managers will try to rise the investment in working capital in order to rise firm's sales and the discounts for early payment expected from its suppliers. However, Caballero et al. (2014) indicated that at a certain level of working capital, more investment starts to be negative in term of value creation due to the extra interest expense. Thus, that will increase the possibility of bankruptcy and credit risk of companies. According to Caballero et al. (2014) company's managers have to attempt to stay as close to the ideal level as possible and make sure to escape any deviations from it, which could destroy the company's value.

Caballero et al. (2014) analyzed if the financing constraints affect the ideal level of investment in working capital. Caballero et al. (2014) findings showed that, although they always keep the concave relation between working capital and company performance, the ideal working capital level of companies that are more probable to be financially constrained is lesser than that of less constrained companies. Additionally, Caballero et al. (2014) indicated that this result is strong to several proxies of financial constraints, and it explained the effect of internally produced funds and the access to external funding on firm's working capital investment decisions.

In Asia as well, specifically in Malaysia, Mohamad and Saad (2010), investigated a research to provide an empirical evidence about the impact of working capital management on the performance of Malaysian listed firms, from a perception of market valuation and profitability. Their study analyzed a secondary data collected from Bloomberg's database of 172 randomly selected firms in Bursa Malaysia for an interval period of five years from 2003 to 2007.

Mohamad and Saad (2010) considered three main dependent variables which are: Tobin Q (TQ) as the market value proxy, calculated as the [(market value of equity + book value of liability)/ total assets], return on invested capital (ROIC) calculated as [net income/total capital], and return on assets (ROA) calculated as [earnings before interest tax/total asset], both ROA and ROIC both as the proxy for profitability. Mohamad and Saad (2010) also considered the working capital components as the independent variables in order to determine their effect on the company's performance. The components of working capital are: the cash conversion cycle (CCC) including [days sales in inventory (DSI) and days sales outstanding (DSO) and days payables outstanding (DPO)], current ratio (CR) [current asset/current liabilities], current asset to total asset ratio (CATAR) [current assets/total assets], current liabilities to total asset ratio (CLTAR) [current liability/total asset] and debt to asset ratio (DTAR) [total debt/total asset].

Mohamad and Saad (2010) used SPSS program to determine the correlation and multiple regression analysis for the selected variables. Mohamad and Saad (2010) found that the problem of multicollinearity is not existed in the analysis because the correlation where reasonably low. According to Mohamad and Saad (2010) the correlations results for TobinQ showed a positive coefficient at level of significance of 1% with all of CATAR

(+0.172), CLTAR (+0.103) and DTAR (+0.107). On the other hand, the correlation results for TobinQ showed a positive insignificant coefficient with CACLR (0.011), while, a negative coefficient with cash conversion cycle (CCC) at a level of significance of 5%.

Additionally, according to Mohamad and Saad (2010), the correlation analysis results for Return on Assets (ROA) indicated a positive coefficient with CACLR (+0.183) and CATAR (+0.293) at a level of significance of 1%, while found a negative coefficient with all of cash conversion cycle (CCC) (-0.154), CLTAR (-0.078) and DTAR (-0.247) at a significance level of 1%. On the other hand, the analysis found a positive coefficient between return on invested capital (ROIC) with each of CACLR (+0.064) at significant level of 10%, CATAR (+0.379) at significant level of 1% and CLTAR (+0.203) at significant level of 1%. While the analysis found a negative coefficient with CCC (-0.135) at significant level of 1% and with DTAR (-0.063) at significant level of 10%.

Mohamad and Saad (2010) applied regression analysis on 860 firm-years observations in order to determine the effects of working capital on company value and profitability. The test that Mohamad and Saad (2010) applied showed that CCC is negatively related with each of TobinQ, ROA and ROIC at a significant level of 1%. While, the test found that CACLR is has a negative relationship with each of ROA and ROIC at 1% confidence level, but was negative insignificant related with TobinQ. Accordingly Mohamad and Saad (2010) suggested that an increase in both ROA and ROIC could be interpreted by a decrease in CACLR but not for Tobin. Mohamad and Saad (2010) found also that the CR effect is significantly negative with each of return on asset ROA and return on invested capital ROIC where they explained that a positive return of the companies could be gained by decreasing CACLR.

Additionally, the regression results of Mohamad and Saad (2010) study indicated that CATAR is positively related with each of TobinQ, ROA and ROIC at 1% confidence level, suggesting that any rise in any of TobinQ, ROA or ROIC could be interpreted by a rice in CATAR. Thus, according to Mohamad and Saad (2010) the results suggested that listed companies in Malaysia incline to depend most on the tendency of current asset to make profit. Accordingly, they have kept an ideal daily requirement of current assets in addition to satisfy their short term duties, or otherwise profitability would be reduced dramatically. While regression results showed a negative association between CLTAR and both of TobinQ and ROIC at confidence level of 10% while at 1% level of confidence negative significant relationship between CLTAR and Return on Asset ROA. According to Mohamad and Saad (2010) the pervious findings indicated that when the ratio decrease that will increase the company's performance.

Additionally, Mohamad and Saad (2010) found that DTAR had a positive relation with TobinQ at significant level of 1%, and negative relationship with return on asset ROA at significant level of 1%, while showed negative insignificant relationship between DTAR and ROIC. According to Mohamad and Saad (2010) explanations that an increase or reduction in debt level will have a significant impact on the company's performance,

which means that decreasing the debt level will decrease significantly TobinQ and significantly increase the return on asset ROA. Accordingly, Mohamad and Saad (2010) suggested that any modifications in return on asset ROA and TobinQ could be interpreted by alterations in DTAR. However, changes in DTAR could not be interpreted by modifications in return on invested capital (ROIC).

Generally Mohamad and Saad (2010) found a negative relationship between working capital factors with firm's profitability and market valuation, which suggested a significance of managing working capital requirement to guarantee an enhancement in company's market value and profitability from company's strategic and operational perspective to function efficiently and effectively in Malaysia.

In the emerging market specifically Cyprus, Charitou et al. (2010) conducted a study about the effect of working capital management on company's financial performance. Charitou et al. (2010) collected the data of the annual reports for 43 industrial listed companies in the Cyprus Stock Exchange for the period of 1998 till 2007 which they had all their financial data complete and available.

Charitou et al. (2010) considered the cash conversion cycle which is the tool of managing working capital as the independent variable including all its measures which are: stockholding period, debtors collection period and creditors payment period. Additionally, the study considered the profitability measure return on assets (ROA) as the dependent variable of the research. Moreover, Charitou et al. (2010) considered all of Natural logarithm of sales, sales growth and debt ratio as the control variables for the study.

Charitou et al. (2010) applied a descriptive statistics analysis for their study which consisted 43 companies over the period of 10 years, in total there was 430 company year's observations. Charitou et al. (2010) found that the return on assets (ROA) had an average value of 5%, with a minimum value of -30% and a maximum value of 49%. While the average day's sales outstanding were 248 days and the average days of inventory were 103 days. The number of days the companies take to redeem their duties to suppliers (CREDITOR) were 210 days. Charitou et al. (2010) also found that the yearly sales had an average value of £ 23 million, while on average the annual growth in sales were 28% and debt ratio had an average value of 46%. Moreover, the cash conversion cycle had a mean value of 214 days with a maximum value of 748 days and a minimum value of -278 days.

Charitou et al. (2010) used Pearson's correlation analysis on all the investigated variables. Charitou et al. (2010) found that profitability had an inverse relation with cash conversion cycle (CCC) including all its measures (days in receivables, days in payables and days in inventory). According to Charitou et al. (2010), these results showed that company's financial health is negatively related to all the measures of cash conversion cycle (CCC).

Charitou et al. (2010) applied the multivariate regression analysis model to test the relationship between working capital management in term of cash conversion cycle (CCC) and firm's profitability in Cyprus. Though, the results indicated that days in inventory (STOCK) had an inverse relationship with profitability (ROA), while the sales growth had a positive coefficient with profitability (ROA). According to Charitou et al. (2010) these results suggested that growth leads to more profitability, and high leveraged companies (DEBT) are less able to make profit, since these companies have more default risk.

Charitou et al. (2010) also regressed return on assets (ROA) against day's sales outstanding (DEBTOR) and all control variables, and found that DEBTOR is inversely related to profitability (ROA. Moreover, Leverage were negatively related to profitability (ROA) and these two results were statistically significant according to the F-test.

Additionally, Charitou et al. (2010) found from the regression of ROA against days payable (CREDITOR) and the control variables, that days payable (CREDITOR) had a negative significant relationship with profitability (ROA). Charitou et al. (2010) explained the previous result by that the less profitable the company is the more time it takes to repay its duties and obligations. Additionally, Charitou et al. (2010) found that high leveraged companies (DEBT) are less able to make profit since these companies have more default risk.

In total, Charitou et al. (2010) regressed the cash conversion cycle (CCC) and the three control variables against ROA. Charitou et al. (2010) found that the cash conversion cycle has a negative significant relationship with profitability (ROA) and again they found that leverage is negatively related to profitability.

Charitou et al. (2010) confirmed that if the cash conversion cycle (CCC) components were managed efficiently with efficient usage of the company's recourse, then this will increase company's profitability, decrease volatility, reduce default risk and totally add value to the firm in the emerging market.

In Finland Enqvist et al. (2014) conducted a study concerning the impact of working capital management on firm's profitability in different business cycles. Enqvist et al. (2014) collected in their research the data of listed firms on the Nasdaq OMX Helsinki stock exchange over 18 years from 1990 till 2008, which included 1136 company year observations.

Enqvist et al. (2014) considered working capital management in the form of cash conversion CCC with all its components (Number of day's account receivable, number of day's account payable and number of day's inventory) as the independent variables. While Enqvist et al. (2014) considered the return on assets ROA as the measure of the firm's overall profitability and the gross operating income to non-financial assets both as the dependent variable for the study. Additionally, Enqvist et al. (2014) added some control variables for the study that have a potential to affect the estimated model, which

were: company size (measured as the natural logarithm of sales), current ratio (measured as: current assets/current liabilities) and debt ratio (measured as the short-term loans + long-term loans/total assets). Moreover, Enqvist et al. (2014) introduced the term of business cycles and measured it by real GDP, to show the different stages that the economy goes through.

Enqvist et al. (2014) applied the descriptive statistics analysis for the variables they studied and they found that the cash conversion cycle had an average of 108.8 days for the Finnish companies. Enqvist et al. (2014) compared these results to firms in other countries and they found that the cash conversion cycle of Finish firms was higher than the ones for Spanish SMEs (76.3 days) and also higher than the large Belgian firms (44.5 days). However, it was lower than listed firm on the Athens Stock Exchange which had an average cash collection cycle of (189 days). Moreover, the analysis of Enqvist et al. (2014) showed that the cash conversion cycle CCC for Finnish companies vary with a range of 408.8 days. Also it showed that on average accounts payable deferral has a value of 56.4 days while the average inventory had a value of 117.6 days and the accounts receivable conversion periods on average had a value of 47.6 days. Additionally, Enqvist et al. (2014) compared the result of the average inventory for Finnish firms to others, and they found that it's higher than companies in the U.S. which has 78 days and higher than Belgian firms which has 46.62 days.

Enqvist et al. (2014) in their descriptive analysis found that the ROA had a mean value of 8.4% for companies in Finland, which were more than the reported average ROA for the Spanish SMEs (7.9%). They also found that the average gross operating income was 101% of the (total assets and financial assets).

Furthermore, the descriptive statistics of Enqvist et al. (2014) indicated that Finnish listed firms on average, 55.3% of the firm's assets are funded by the debt. Moreover, the average sales of Finnish firms had a value of 5.8 million and the current ratio for them had a value of 1.59.

According to Enqvist et al. (2014), the analysis of the variables' correlations according to the three categories of economic status (normal, boom and downturn period) showed that both Return on Assets and Gross Operating Income is negatively correlated with accounts payable in all economic status. According to Enqvist et al. (2014) these results suggested that less profitable companies will have to wait more time to pay their bills. On the other hand, the inventory showed positive (negative) correlations with both measures of profitability in the normal and boom (downturn) periods. Generally, Enqvist et al. (2014) found that there is a positive correlation between accounts receivable and profitability. Additionally, Enqvist et al. (2014) found that the sales debt (current ratio) are negatively (positively) correlated with the two profitability MEASURES in all economic status.

Enqvist et al. (2014) found in their regression model that there is a statistically significant negative relationship between the cash conversion cycle CCC and both measures of profitability which is Return on Assets ROA and Gross Operating Income GOI. Accordingly Enqvist et al. (2014) suggested that firms can increase their profitability by maximizing their working capital efficiency.

According to Enqvist et al. (2014) regression analysis results showed that there is a statistically significant negative relationship between the account payable deferral period and the measure of profitability Gross Operating Income GOI. Enqvist et al. (2014) suggested that less profitable companies need to take more times to pay their bills, accordingly, shorter account payable cycle will improve the firm's profitability. Enqvist et al. (2014) stated that the economic status had no measurable effect on the relationship between profitability and account payable. On the other hand, the results of regression analysis indicated that between account receivable and profitability there is a negative, however, statistically insignificant relationship. More detailed results of Enqvist et al. (2014) study showed that during the poor economic status there was an aggressive significantly negative relation between account receivables and return on assets ROA, which means that during the downturn period firms with low profit had a longer account receivable conversion period in Finland, while in the boom economic status no significant changes appeared. Additionally, the regression model results showed that between inventories and firms profitability in its both measures Return on Assets ROA and Gross Operating Income GOI, there is a negative statistically significant relationship. According to Enqvist et al. (2014), these results suggested that the more efficient the management of inventories is the lower inventory conversion period. Enqvist et al. (2014) suggested that Finnish firms can improve their profitability to higher levels and the results showed that the boom economic status had no significant effect on the relationship between profitability and inventories.

Moreover, Enqvist et al. (2014) found in their regression analysis that ROA and the current ratio had a positive statistically significant relationship which suggested that companies can make more profits by advancing their margin of liquidity. Enqvist et al. (2014) also found that debt had a negative significant relationship with profitability only when it's measured by Return on Assets ROA, also firm size had a negative relation with profitability.

According to Enqvist et al. (2014) working capital efficiency must be included into the daily corporate routines, due to its importance for the company's profitability. Enqvist et al. (2014) suggested that working capital management also must be included in the financial planning processes.

In Africa, specifically Ghana, Akoto et al. (2013) conducted a study to determine the effect of working capital management practices on the profitability of manufacturing companies listed in Ghana. The research of Akoto et al. (2013) used the annual financial reports data of 13 manufacturing firms listed in Ghana Stock Exchange for the period of 2005 to 2009

and used the methodology of panel data to for the analysis and the OLS regression model to test the relationships.

Akoto et al. (2013), considered return on equity ROE as the dependent variable of the study, measured as (the net profit divided by total asset), which considered as the indicator for profitability. Akoto et al. (2013), considered each of the following as the independent variables for their research: first, the accounts receivable days ARD which measure the cash collection policy for the manufacturing listed companies in Ghana. Second, the accounts payable days APD which is an indicator for how much time the company takes to pay its short-term creditors in Ghana. Third, the cash conversion cycle CCC which indicates the time in days that the company could take to turn its resource inputs into cash flows. Forth, the current ratio CR which is the measure of the firm's liquidity, while Akoto et al. (2013) considered the Firm Size (natural logarithm of sales) and current assets turnover (CAT) as the control variables for the research.

According to Akoto et al. (2013) the descriptive statistics showed that on average the return on equity (ROE) had a value of 3.5% and at minimum it was -67.5% while at maximum it was 43% with 23.1% as a value of standard deviation. While the average of account receivable days (ARD) was found to be 30 days and at minimum was 1 while had a maximum value of 76 days. On the other hand, the account payable days had on average a value of 41.7 days with a minimum of 14 and a maximum value of 74 days with a standard deviation of 18 days. Moreover, the cash conversion cycle (CCC) for the listed manufacturing firms in Ghana Stock Exchange had a mean value of 112 days with a maximum value of 326 days and a minimum value of 6 days. Additionally, the descriptive statistics showed that the Current Ratio (CR) had a mean value of 1.7 with a minimum value of 0.4 and a maximum value of 9.8, while the Size had an average of 16.5 and a minimum value of 13.2 and a maximum value 18.9 with a standard deviation of 1.6. While the current asset turnover (CAT) had a mean value of 2.3 with a minimum of 0.8 and a maximum value of 5.5 and a value of standard deviation of 1.

According to Akoto et al. (2013), the regression model showed that the accounts receivable days (ARD) had a statistically significant negative relationship with the return on equity (ROE), suggesting that if listed manufacturing firms lower their average collection period they can increase their profitability. While the regression results showed that account payable days (APD) had a positive but statically insignificant relationship with return on equity (ROE). Additionally, the results showed that between current ratio (CR) and return on equity (ROE) there is positive statistically significant relationship, which according to Akoto et al. (2013) means that listed manufacturing firms in Ghana need to have more current asset to be able to repay their current liabilities to be more profitable.

Additionally the results of regression analysis of Akoto et al. (2013) study, revealed that between profitability (return on equity ROE) and the firm size (LOS) there is a positive statistically significant relationship. Between the current assets turnover (CAT) and profitability (return on assets ROE) there was a positive relationship. Generally, according

to Akoto et al. (2013) between the cash conversion cycle (CCC) and profitability in term of return on equity (ROE) there was a positive statistically significant relationship.

Akoto et al. (2013) suggested in their study that in order to settle the current liabilities, managers of the Ghanaian listed manufacturing firms need to reserve sufficient current assets with them. Akoto et al. (2013) also stated that improving the product quality and enhance advertising are essentials for managers in Ghana to improve their sales. Additionally, Akoto et al. (2013) stated that well managed working capital and keeping an ideal level of cash conversion cycle (CCC) will help in solving the problem of illiquidity and ultimately increase profitability for listed manufacturing firms in Ghana.

In Asia, Mansoori and Muhammad (2012) investigated a study in Singapore about the effect of working capital management on company's profitability, for the period from 2004 to 2011 using the panel data analysis, pooled OLS and fixed effect estimation to process the data that they collected. Mansoori and Muhammad (2012) collected the financial data for 92 listed firms in Singapore Stock Exchange (SGE), which included 736-firm year observation for the period of 8 years from 2004 to 2011.

Mansoori and Muhammad (2012) considered the ratio of Return on Assets (ROA) as the dependent variable of the study. On the other hand, Mansoori and Muhammad (2012) used the cash conversion cycle (CCC) including its entire component which are [Receivable Collection Period (RCP), Inventory Conversion Period (ICP) and Payment Deferral Period (PDP)] as the independent variables for their research. Additionally, Mansoori and Muhammad (2012) used each of the firm size (the natural logarithm of total assets), sales growth [(current year sales – previous year sales)/ previous year sales], debt ratio (total debt to total assets) and the GDP rate were all included in the regression model.

According to Mansoori and Muhammad (2012) the descriptive statistics showed that the return on assets for the entire sample had a mean value of 2.9%, according to sectors classifications: construction and material sector had an average ROA of 8.58% which was the highest return on assets across their sample. On the other hand, the technology hardware sector had a negative return on asset with an average of -2.46%. While for the cash conversion cycle, technology hardware sector had the lowest CCC average across the sample with a value of 79 days, and with CCC length of 181 days, the construction and material sector marked the highest cash conversion cycle average. With regard to the receivable collection period, food products sector had the lowest average of 57 days while the highest receivable collection period was marked by the electronic sector with an average of 136 days. Additionally, the technology hardware sector had the lowest inventory conversion period with an average of 73 days, while with an average of 162 days the construction and material sector had marked the highest inventory conversion period. Moreover, the lowest payable deferral period was for the food produces with an approximate average value of 45 days, while the highest period with an average pf 96 days was for the construction and material sector.

Mansoori and Muhammad (2012), applied the spearman correlation, and they found that between RCP and ICP with Return on Assets there is a negative relationship, also found a negative relationship between PDP and ROA. Additionally, the results showed a direct relationship between the three control variables (Firm Size, Firm Growth, and Gross Domestic Product) with profitability.

Mansoori and Muhammad (2012), applied the Ordinary Least Squares regression model (OLS) and the fixed effect estimation model to test the relationship between working capital management and profitability. The regression analysis results of Mansoori and Muhammad (2012) showed that between the cash conversion cycle CCC and return on assets ROA there was highly negative relationship according to both pooled OLS and the fixed effect estimation. According to Mansoori and Muhammad (2012) the regression's result suggests that if managers could reduce the length of the cash conversion cycle by one day they could increase the company's profitability by (0.01 % according To Ordinary Least Squares Model, and 0.02 % according to fixed estimation).

The regression results according to Mansoori and Muhammad (2012) also showed that there was a highly significant negative association between the receivables collection period and return on assets (ROA). Mansoori and Muhammad (2012) stated that proper management of the receivables could be a valid tool to improve the company's performance. Moreover, Mansoori and Muhammad (2012) found in their regression results that between the inventory conversion period and the firm's profitability there was a strong negative relationship. The results of Mansoori and Muhammad (2012) showed that by increasing the inventory turnover by one day that will lead to 0.01% decrease in the return on assets according to OLS and 0.02% according to the fixed effect estimation.

Additionally, Mansoori and Muhammad (2012) indicated that between payable deferral period and profitability there is a negative significant relationship according to both regression models (OLS and fixed effect estimation), suggesting that companies need to wait more time to pay their bills if they are less profitable. Mansoori and Muhammad (2012) found that there was a highly significant negative relationship between debt ratio and profitability, and found that ROA increases with the size of the firms and of the GDP rate and with the firm's growth, showing that the regression coefficient with all control variables. Additionally, Mansoori and Muhammad (2012) found that the relationship between working capital management and firm's profitability could be influenced by the industrial differences.

In Greece a study by Lazaridies and Tryfonidis (2006) was conducted regarding the relationship between working capital management and listed firms profitability in Athens Stock Exchange for the period of 2001 and 2004. Lazaridies and Tryfonidis (2006), collected for their research stacked data for 131 listed firms in Athens Stock Exchange

(AGE) that have a complete data, which included 524 observation for the period of 2001 to 2004.

Lazaridies and Tryfonidis (2006) chose the dependent variable to be the gross operating profit. While, they used the cash conversion cycle (CCC) and all its component which are [number of days account receivable, number of days account payable and number of days inventory] as the independent variables for their research. Additionally, Lazaridies and Tryfonidis (2006) used each of the company size measured as (the natural logarithm of total sales) and the financial debt to be all included in their regression model.

According to Lazaridies and Tryfonidis (2006) the descriptive statistics of their study showed that, on average 16.8% of the total assets are financial assets, and the mean value of total sale is 118.9 million euros, with a median of 31.9 million. Lazaridies and Tryfonidis (2006) also found that the average net operating profit equal to 2.58%, while on average 148 days is the credit period given to the customers of the sampled firms with a median value of 130 days. Additionally, Lazaridies and Tryfonidis (2006) found the average number of payable days is 96, with a median value of 73 days, while on average, the inventory took 136 days to be sold with a median value of 104 days. Lazaridies and Tryfonidis (2006) found that the overall cash conversion cycle takes 188 days for the sampled firms, with a median value of 165 days.

Lazaridies and Tryfonidis (2006) applied the Pearson correlation model and they observed that there is a negative correlation between the net operating profit with each of the number of days accounts receivables, number of days accounts payables and cash conversion cycle. Additionally, Lazaridies and Tryfonidis (2006), observed a positive relationship between gross operating profit and finical debt, while they explained, that firms listed in ASE are making use of the financial debt in order to reduce their cash conversion cycle and increase their profitability.

The regression model that Lazaridies and Tryfonidis (2006) applied showed a highly significant negative relationship between profitability and cash conversion cycle. Lazaridies and Tryfonidis (2006) observed that the larger the firm the higher its gross operating profit. Additionally, the regression model of Lazaridies and Tryfonidis (2006), showed a highly significant negative relationship between the gross operating profit with the number of days account payable, and the same type of relationship existed between the gross operating profits with the number of days account receivables. However, Lazaridies and Tryfonidis (2006) found insignificant negative relationship between gross operating profit and number of day's inventory.

As an extend to Lazaridies and Tryfonidis (2006) study, another investigation were made by Gill et al. (2010), where they sampled 88 American firms listed on New York Stock Exchange for a period of 3 years form 2005 until 2007 with a total of 264 observations. Gill et al. (2010) considered the cash conversion cycle including all its components which are (number of days account receivable, number of days account payable and number of

days inventory) all as the independent variable of the study. Gill et al. (2010) considered the gross operating profit (profitability) as the dependent variable of their research.

The descriptive statistics that Gill et al. (2010) applied showed that the cash conversion cycle for the 88 American listed firms had a mean value of 89.94 days, while the profitability had an average of 0.30. The regression analysis that Gill et al. (2010) applied showed that there was statistically significant negative relationship between the number of days account receivables and profitability. The results of Gill et al. (2010) also showed that there was no statistically significant relationship between profitability and both number of days account payable and number of day's inventory. On the contrast, Gill et al. (2010) found a positive significant relationship between cash conversion cycle and profitability, showing that the longer the cash conversion cycle the higher probability of the firm.

A recent study conducted by Mathuva (2010), in Kenya, investigated the influence of working capital management components on corporate's profitability. Mathuva (2010), collected a data of 30 listed firm in Nairobi Stock Exchange (NSE), for the period of 1993 to 2008. Mathuva (2010), used both the pooled OLS and the fixed effects regression models test his variables. Accordingly, Mathuva (2010) proved that there is a highly significant negative relationship between the accounts collection period and profitability which is net operating profit ratio, suggesting that the more profitable the firm is the shorter it takes to collect receivables from its customers. On the contrast, Mathuva (2010) findings showed a highly significant positive relationship between the inventory conversion period and profitability. Additionally, Mathuva (2010) found a highly significant positive relationship between the average payment period and profitability, showing that the more time the firm takes to pay its payable the more profitable it is.

Vahid et al. (2012) investigated the relationship between working capital management and corporate performance for Iranian companies. Vahid et al. (2012) included in their sample 50 different firms for the period of 2006 to 2009. Vahid et al. (2012) findings' showed that there is a negative and significant relationship between the independent variables of Average Collection Period, Inventory Turnover in days, Average Collection Period, Net Trading Cycle and the dependent variable of Net Operating Profitability. However, Vahid et al. (2012) did not find any prove for the existence of a significant relationship between Cash Conversion Cycle and the company's performance variable which is Net Operating Profitability.

Mun and Jang (2015) investigated the impact of U.S. restaurant firms' working capital on their profitability. Mun and Jang (2015) findings' showed a significant inverted U-shape relationship between working capital and a firm's profitability (Return on Assets). Mun and Jang (2015) explained that a firm's cash level is an essential element for an efficient working capital management.

Alipour (2011) tested the relationship between working capital management and profitability for listed Iranian firms for the period of 2001-2006. Significant relation between working capital management and profitability. Alipour (2011) findings' showed that there is a negative significant relationship between cash conversion cycle and gross operating profit. Additionally, Alipour (2011) found a negative significant relationship between inventory turnover in days, average collection period and gross operating profit. However, Alipour (2011) found a direct significant relationship between average payment period and gross operating profit for his sampled firms.

Afeef (2011) studied the effect of working capital management on the profit of small and medium firms in Pakistan. Afeef (2011) applied his research on a sample of 40 Pakistani small and medium enterprises (SME's) listed in Karachi Stock Exchange for the period of 2003 to 2008. Afeef (2011) findings' revealed the following results: Insignificant negative association between Inventory Conversion Period and Return on Asset. Insignificant negative relationship between Receivable Collection Period and Return on Assets. Insignificant negative association between Payable Deferral Period and Return on Assets. Insignificant positive association between Cash Conversion Cycle and Return on Assets. Insignificant positive association between Current Ratio and Return on Assets. Significant negative association between Operating Profit to Sales Ratio and Inventory Conversion Period. Significant negative association between Operating Profit to Sales Ratio and Receivable Collection Period. Insignificant negative association between Payable Deferral Period and Operating Profit to Sales Ratio. Insignificant negative association between Cash Conversion Cycle and Operating Profit to Sales. Highly insignificant negative association between Current Ratio and Operating Profit to Sales Ratio.

Korankye and Adarquah (2013) analyzed the impact of working capital management on firm's profitability for listed manufacturing firms in Ghana for the period of 2004 to 2011. Korankye and Adarquah (2013) findings' showed that working capital cycle has a statistically significant negative association with firm's profitability. Moreover, Korankye and Adarquah (2013) found that Accounts Receivable Collection Period, Inventory Turnover Period and Accounts Payable Payment Period are negatively correlated with profitability.

Uremadu et al. (2012) investigated the effect of working capital management on corporate profits in Nigeria for the period of 2005-2006. Uremadu et al. (2012) findings' revealed a positive effect of inventory conversion period and debtor's collection period on return on assets. Additionally, Uremadu et al. (2012) found a negative effect of cash conversion cycle and creditor's payment period on return on assets.

Charitou et al. (2012) studied the relationship between working capital management and firm's profitability for Indonesian firms over the period of 1998-2010. Charitou et al. (2012) results showed that Cash Conversion Cycle and Net Trade Cycle are positively related with the firm's profitability. Moreover, Charitou et al. (2012) found that Debt Ratio (firm's riskiness) is negatively associated with the firm's Return on Assets.

Kaddumi and Ramadan (2012) investigated the effect of working capital management on the performance of 49 Jordanian Industrial corporations listed at Amman Stock Exchange for the period of 2005 to 2009. Kaddumi and Ramadan (2012) findings' showed the following results: Statistically significant relation between Return on Total Assets (Net Operating Profit) and Average Collection Period. Insignificant negative relation between Average Age of Inventory and Return on Total Assets. Significant negative relation between Average Age of Inventory and Net Operating Profit. Positive relation between Average Payment Period and Net Operating Profit. Insignificant positive relation between Average Payment Period and Return on Assets. Negative significant relation between Cash Conversion Cycle and firm's performance. Statistically significant inverse relation between Net Trading Cycle and profitability. Statistically significant influence for working capital management on firm's performance.

Tahir and Anuar (2015) studied the relationship between working capital management and the firm's profitability for the textile sector in Pakistan. Tahir and Anuar (2015) investigated their research on a sample of 127 textile firms listed at Karachi Stock Exchange for the period of 2001-2012. Tahir and Anuar (2015) findings' revealed the following results: Average collection period in days, net working capital level, current assets to operating income, current assets to sales ratio, and current liabilities to total assets have a negative effect on return on assets. While Tahir and Anuar (2015) found that account payable period in days, inventory turnover in days, cash conversion cycle, net trade cycle, cash turnover ratio, current assets to total assets ratio and current ratio have a positive relationship with profitability.

Alavinasab and Davoudi (2013) examined the relationship between working capital management and profitability for 147 listed companies at Tehran Stock Exchange for the period of 2005-2009. Alavinasab and Davoudi (2013) findings' showed the following results: negative significant relation between the cash conversion cycle and return on assets. Positive significant relationship between current ratio and return on assets. Significant positive relationship between current assets to total assets ratio return on assets. Negative significant relationship between current liabilities to total assets ratio. Negative significant relationship between total liabilities to total assets ratio and return on assets. Negative significant relationship between cash conversion cycle and return on equity. Insignificant relationship between current ratio and return on equity. Insignificant relationship between current assets to total assets ratio and return on equity. Negative significant relationship between current liabilities to total assets ratio and return on equity. Negative significant relationship between total liabilities to total assets ratio and return on equity.

Zawaira and Mutenheri (2014) investigated the impact of working capital management on profitability of firms listed on the Zimbabwe Stock Exchange for the period of 2010-2012. Zawaira and Mutenheri (2014) findings' revealed the following results: profitability is not associated with the receivable collection period, inventory conversion period, cash

conversion cycle, quick ratio, current asset to total asset ratio, current liabilities to total asset ratio, debt ratio and age of company. However, Zawaira and Mutenheri (2014) found a negative and significant relationship between payable deferral period and profitability.

Ngwenya (2012) investigated the relationship between working capital management and profitability a sample of 69 listed firms on Johannesburg Stock Exchange (JSE) for the period of 1998-2008. Ngwenya (2012) found a statistically significant negative relationship between Gross Operating Profit and each of the Cash Conversion Cycle and Number of Days Account Receivable. However, Ngwenya (2012) findings' showed a significant positive relationship between Gross Operating Profit and Number of Days Payable and Number of Days Inventory.

Table 1 - Empirical Studies' Summary Table

Empirical Studies' Summary Table		
Author, Year, Country	**Dependent Variables, Independent Variables**	**Results**
Deloof (2003), Belgium	Dependent Variable: Gross Operating Profit Independent Variables: Cash Conversion Cycle, Number of Days Accounts Receivable, Number of Days Accounts Payable and Number of Days Inventory.	Negative significant relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms.
Raheman and Nasr (2007), Pakistan	Dependent Variable: Net Operating Profitability	Strong negative relationship between all variables of working capital (Cash Conversion Cycle, Average Collection Period,

	Independent Variables: Cash Conversion Cycle, Average Collection Period, Inventory Turnover in days, Average Payment Period and Current Ratio	Inventory Turnover in days and Average Payment Period) with Net Operating Profitability. Significant negative relationship between liquidity (current ratio) and profitability.
Barine (2012), Nigeria	Gross working capital Costs of Gross Working Capital	Returns on improved working capital position are less than the cost of working capital (indicates inefficiency in the usage of working capital) this negative result indicate low levels of return to shareholders. Incurring negative relation, showing more costs of working capital will reduce the profitability.
Ukaegbu (2014), Africa	Dependent Variable: Gross Operating Profit Independent Variables: Number of Days Accounts Receivable, Number of Days Accounts Payable, Number of Days Inventory and In Total Cash Conversion Cycle (CCC)	Strong negative relationship between profitability (gross operating profit) and the whole cash conversion cycle.
Sharma and Kumar (2011), India	Dependent Variable: Return on Assets (ROA) Independent Variables: Number of Days Accounts Receivable, Number of Days Accounts Payable, Number of	Positive relationship between ROA and number of days accounts receivable. Negative relationship between ROA and number of days accounts payable and inventory. Positive relationship between ROA and CCC.

	Days Inventory and In Total Cash Conversion Cycle (CCC)	
Jafari et al. (2014) Iran	Dependent Variable: Bankruptcy Independent Variables: Cash Conversion Cycle, Debtor Conversion Period, Inventory Conversion Period and Period of Debit Postponement.	Negative relationship between working capital management and the risk of bankruptcy. Efficient working capital management reduces the firm's bankruptcy probability.
Karadagli (2012), Turkey	Dependent Variable: Stock Market Returns Independent Variables: Cash Conversion Cycle and Net Trade Cycle.	Positive relationship between cash conversion cycle and stock market return for SMEs Positive relationship between net trade cycle and stock market return for SMEs Negative relationship between cash conversion cycle and stock market return for larger companies Positive relationship between net trade cycle and stock market return for larger companies.
Napomech (2012), Thailand	Dependent Variable: Gross Operating Profit Independent Variables: (Cash Conversion Cycle) [Inventory Conversion Period, Receivables Collection Period, and	Negative relation exists between gross operating profit and inventory conversion period. Negative relationship between gross operating profit and receivables collection period.

	Accounts Payables Deferral Period]	Negative relationship between gross operating profit and accounts payables deferral period.
Makori and Jagongo (2013), Kenya	Dependent Variable: Return on Assets Independent Variables: The Average Collection Period, The Inventory Conversion Period, The Average Payment, Period and The Cash Conversion Cycle.	Negative relationship between profitability and number of day's account receivable, and cash conversion cycle. Positive relationship between profitability and number of days of inventory and number of day's payable.
Abuzayed (2012), Jordan	Dependent Variable: Gross Operating Profit GOP (Profitability) Tobin's Q (TQ) (market valuation) Independent Variables: Number of Days Account Receivables (DAR), Number of Days Inventory (DI), Number of Days Account Payable (DAP) and Totally Cash Conversion Cycle (CCC)	Positive correlation between the cash conversion cycle and the gross operating profits. Negative relationship between accounts payable and profitability. Positive relationship between number of day's inventory and profitability. Positive relationship between day's accounts receivables and profitability.
Caballero et al. (2014), UK	Dependent Variable: (Working capital management): Net trade cycle Independent Variables: (Corporate Performance):	Large and statistically significant inverted U-shaped relation between corporate performance and working capital.

	Company Size (SIZE), Leverage (LEV), Opportunity Growth (GROWTH) and Return on Assets (ROA)	
Mohamad and Saad (2010), Malaysia	Dependent Variable: Tobin Q (TQ) as the market value proxy, Return on Invested Capital (ROIC) and Return on Assets (ROA) both as the proxy for profitability. Independent Variables: The Working Capital Components which are the Cash Conversion Cycle (CCC) including [Days Sales In Inventory (DSI) and Days Sales Outstanding (DSO) and Days Payables Outstanding (DPO)], Current Ratio (CR), Current Asset To Total Asset Ratio (CATAR), Current Liabilities To Total Asset Ratio (CLTAR), and Debt To Asset Ratio (DTAR)	CCC is negatively related with each of TobinQ, ROA and ROIC. CACLR has a negative relationship with each of ROA and ROIC, but was negative insignificant related with TobinQ. The CR effect is significantly negative with each of return on asset ROA and return on invested capital ROIC. CATAR is positively related with each of TobinQ, ROA and ROIC. Negative association between CLTAR and both of TobinQ and ROIC. Negative significant relationship between CLTAR and Return on Asset ROA. DTAR had positive relation with TobinQ and negative relationship with return on asset ROA, while showed negative insignificant relationship between DTAR and ROIC.
Charitou et al., (2010), Cyprus	Dependent Variable: Return on Assets (ROA) Independent Variables: The Cash Conversion Cycle and All Its components	Days in inventory (STOCK) has an inverse relationship with profitability (ROA). Day's sales outstanding (DEBTOR) is inversely related to profitability (ROA).

	(Stockholding Period, Debtors Collection Period and Creditors Payment Period)	Days payable (CREDITOR) had a negative significant relationship with profitability (ROA). The cash conversion cycle has a negative significant relationship with profitability (ROA).
Enqvist et al., (2014), Finland	Dependent Variable: The Return on Assets ROA and Gross Operating Income (Profitability) Independent Variables: Cash Conversion CCC (Number of Days Account Receivable, Number of Days Account Payable and Number of Days Inventory)	Statistically significant negative relationship between the cash conversion cycle CCC and both measures of profitability which Return on Assets ROA and Gross Operating Income GOI. Statistically significant negative relationship between the account payable deferral period and the measure of profitability Gross Operating Income GOI. Between account receivable and profitability there is a negative but statistically insignificant relationship. Between inventories and firms profitability in its both measures Return on Assets ROA and Gross Operating Income GOI, there is a negative statistically significant relationship.
Akoto et al., (2013), Ghana	Dependent Variable: Return on Equity (ROE) (Profitability) Independent Variables: Accounts Receivable Days ARD, Accounts Payable Days APD,	Accounts receivable days (ARD) had a statistically significant negative relationship with the return on equity (ROE). Account payable days (APD) had a positive but statistically insignificant relation with return on equity (ROE).

	The Cash Conversion Cycle CCC and Current Ratio CR.	Between current ratio (CR) and return on equity (ROE) there is a positive statistically significant. The cash conversion cycle (CCC) and profitability in term of return on equity (ROE) there was a positive statistically significant relationship.
Mansoori and Muhammad, (2012), Singapore	Dependent Variable: Return on Assets (ROA) Independent Variables: Cash Conversion Cycle (CCC) and all its component which are: Receivable Collection Period (RCP), Inventory Conversion Period (ICP) and Payment Deferral Period (PDP)	Between the cash conversion cycle CCC and return on assets ROA there was highly negative relationship. A highly significant negative association between the receivables collection period and return on assets (ROA). Between the inventory conversion period and the firm's profitability there was a strong negative relationship. Between payable deferral period and profitability a negative significant relationship.
Lazaridies and Tryfonidis (2006), Greece	Dependent Variable: Gross Operating Profit (Profitability) Independent Variables: Cash Conversion CCC (Number of Days Account Receivable, Number of Days Account Payable and Number of Days Inventory)	Statistically significant negative relationship between the cash conversion cycle and Gross Operating Profit. Statistically significant negative relationship between the number of day's account payable and Gross Operating Profit. Statistically significant negative relationship between the number of day's account receivable and Gross Operating Profit.

		Statistically insignificant negative relationship between the number of day's inventory and Gross Operating Profit.
Gill et al. (2010), USA	Dependent Variable: Gross Operating Profit (Profitability) Independent Variables: Cash Conversion CCC (Number of Days Account Receivable, Number of Days Account Payable and Number of Days Inventory)	Statistically significant negative relationship between the number of days account receivables and profitability. No statistically significant relationship between profitability and the number of days account payable. No statistically significant relationship between profitability and the number of day's inventory. A positive significant relationship between cash conversion cycle and profitability.
Mathuva (2010), Kenya	Dependent Variable: Net Operating Profit Ratio (Profitability) Independent Variables: Accounts Collection Period, Inventory Conversion Period, and Average Payment Period.	Highly significant negative relationship the accounts collection period and profitability which is net operating profit ratio. Highly significant positive relationship between the inventory conversion period and profitability. Highly significant positive relationship between the average payment period and profitability.

Vahid et al. (2012), Iran	Dependent Variable: Net Operating Profitability Independent Variables: Accounts Collection Period, Inventory Turnover in Days, Average Payment Period, Cash Conversion Cycle and Net Trading Cycle.	Negative and significant relationship between the variables of Average Collection Period, Inventory Turnover in days, Average Collection Period, Net Trading Cycle and the variable of Net Operating Profitability. No significant relationship between Cash Conversion Cycle and the company's performances (Net Operating Profitability).
Mun and Jang (2015), USA	Dependent Variable: Return on Asset. Independent Variables: Working Capital Rate (WCR), Account Receivable Rate (ARR), Inventories Rate (INVR) and Account Payable Rate (APR).	Significant inverted U-shape relationship between working capital and profitability.
Alipour (2011), Iran	Dependent Variable: Profitability: Gross Operating Profit (GOP) Independent Variables: Cash Conversion Cycle (CCC), Inventory Turnover in Days (ITID), Average Collection Period (ACP), Average Payment Period (APP)	Significant relation between working capital management and profitability. Negative significant relationship between cash conversion cycle and gross operating profit. Negative significant relationship between inventory turnover in days and gross operating profit. Negative significant relationship between average collection period and gross operating profit.

		Direct significant relationship between average payment period and gross operating profit.
Afeef (2011), Pakistan	Dependent Variable: Profitability: Return on Assets (ROA) and Operating Profit to Sales Ratio (OPS) Independent Variables: Cash Conversion Cycle (CCC), Receivable Collection Period (RCP), Inventory Conversion Period (ICP), Payable Deferral Period (PDP) and (Liquidity) Current Ratio (CR)	Insignificant negative association between inventory conversion period and return on assets. Insignificant negative relationship between RCP and ROA. Insignificant negative association between PDP and ROA. Insignificant positive association between CCC and ROA. Insignificant positive association between current ratio and ROA. Significant negative association between operating profit to sales ratio and inventory conversion period. Significant negative association between OPS and RCP. Insignificant negative association between PDP and OPS. Insignificant negative association between CCC and OPS. Highly insignificant negative association between CR and OPS.

Korankye and Adarquah (2013), Ghana	Dependent Variable: Gross Operating Profit Margin GOPM (Profitability) Independent Variables: Working Capital Cycle (WCCY): Accounts Receivable Collection Period, Inventory Turnover Period and Accounts Payable Payment Period.	Working capital cycle has a statistically significant negative association with firm's profitability. Accounts Receivable Collection Period, Inventory Turnover Period and Accounts Payable Payment Period each negatively correlates with profitability.
Uremadu et al. (2012), Nigeria	Dependent Variable: Return on Assets Independent Variables: Inventory Conversion Period (ICP), Debtors Collection Period (DCP), Creditors Payment Period (CPP) and Cash Conversion Cycle.	Positive effect of inventory conversion period, debtor's collection period on return on assets. Negative effect of cash conversion cycle, creditor's payment period on return on assets.
Charitou et al. (2012), Indonesia	Dependent Variable: Return on Assets Independent Variables: Stockholding Period, Debtors Collection Period, Creditors Collection Period, Natural Logarithm of Total Assets, Current Ratio, Sales Growth, Debt Ratio, Cash Collection Cycle and Net Trade Cycle.	Cash Conversion Cycle and Net Trade Cycle are positively associated with the firm's profitability. Debt Ratio (firm's riskiness) is negatively related to the firm's Return on Assets.

Kaddumi and Ramadan (2012), Jordan	Dependent Variable: Return on Total Assets (ROTA) and Net Operating Profitability (NOP). Independent Variables: Average Collection Period (ACP), Average Age of Inventory (AAI), Average Payment Period (APP), Cash Conversion Cycle (CCC) and Net Trading Cycle (NTC)	Statistically significant relation between ROTA (NOP) and ACP. Insignificant negative relation between AAI and ROTA. Significant negative relation between AAI and NOP. Positive relation between APP and NOP. Insignificant positive relation between APP and ROTA. Negative significant relation between Cash Conversion Cycle and firm's performance. Statistically significant inverse relation between NTC and profitability. Statistically significant influence for working capital management on firm's performance.
Tahir and Anuar (2015), Pakistan	Dependent Variable: Return on Assets Independent Variables: Average Collection Period in Days (ACPID), Average Payment Period in Days (APPID), Inventory Turnover in Days (ITID), Cash Conversion Cycle (CCC), Net Trade Cycle (NTC), Net Working Capital Level (NWCL), Current Assets to Operating Income (CAOI), Current Assets to Sales Ratio	Average collection period in days, net working capital level, current assets to operating income, current assets to sales ratio, and current liabilities to total assets have a negative effect on return on assets. Account payable period in days, inventory turnover in days, cash conversion cycle, net trade cycle, cash turnover ratio, current assets to total assets ratio and current ratio have a positive relationship with profitability.

	(CASR), Cash Turnover Ratio (CTR), Current Assets to Total Assets Ratio (CATAR), Current Liabilities Total Assets Ratio (CLTAR) and Current Ratio (CR).	
Alavinasab and Davoudi (2013), Iran	Dependent Variables: Return on Assets and Return on Equity. Independent Variables: Cash conversion cycle, current ratio, current assets to total assets, current liabilities to total assets ratio and total liabilities to total assets ratio.	Negative significant relation between the cash conversion cycle and return on assets. Positive significant relationship between current ratio and return on assets (ROA). Significant positive relationship between current assets to total assets ratio return on assets. Negative significant relationship between current liabilities to total assets ratio. Negative significant relationship between total liabilities to total assets ratio and return on assets. Negative significant relationship between cash conversion cycle and return on equity. Insignificant relationship between current ratio and return on equity. Insignificant relationship between current assets to total assets ratio and return on equity. Negative significant relationship between current liabilities to total assets ratio and return on equity.

		Negative significant relationship between total liabilities to total assets ratio and return on equity.
Zawaira and Mutenheri (2014), Zimbabwe	Dependent Variable: Return on Assets Independent Variables: Receivable Collection Period, Inventory Conversion Period, Payable Deferral Period and Cash Conversion Cycle.	Profitability is not associated with the receivable collection period, inventory conversion period, cash conversion cycle, quick ratio, current asset to total asset ratio, current liabilities to total asset ratio, debt ratio and age of company. Negative and significant relationship between payable deferral period and profitability.
Ngwenya (2012), South Africa	Dependent Variable: Gross Operating Profit (GP) Independent Variables: Cash Conversion Cycle, Number of Days Account Receivables, Number of Days Account Payable and Number of Days Inventory.	Statistically significant negative relationship between Gross Operating Profit and each of the Cash Conversion Cycle and Number of Days Account Receivable. Significant positive relationship between Gross Operating Profit and Number of Days Payable and Number of Days Inventory.

Source Author's own

3. Objective of the study:

3.1. General objective:

The main objective of this study is to determine the relationship between working capital management and profitability of listed firms in the Middle East and West Europe.

3.2. Specific objectives:

In order to achieve the general objective of the study, the following specific objectives were aimed:

i. To examine if there is a significant relationship between Receivable Turnover in Days (RTD) and the profitability of the firm.

ii. To examine if there is a significant relationship between Inventory Turnover in Days (ITD) and the profitability of the firm.
iii. To examine if there is a significant relationship between Payable Turnover in Days (PTD) and the profitability of the firm.
iv. To examine if there is a significant relationship between Cash Conversion Cycle and Profitability of the firm.

4. Research Hypotheses:

The study will consider the following hypotheses:

i. Ho1: There is a negative relationship between Receivable Turnover in Days (RTD) and the Profitability of the firm.

This hypothesis affirms that the less time the firm gives to its customer to pay their bills, the more profit it can make and vice versa. Accordingly, Deloof (2003) confirmed in his research that there is a significant negative relationship between the number of days account receivable and profitability.

ii. Ho2: There is a negative relationship between Inventory Turnover in Days (ITD) and the Profitability of the firm.

This hypothesis affirms that the more time the products stay in inventories the less profitable the firm will be. Accordingly, Deloof (2003) found out that there is a significant negative relationship between the days of inventories and firms profitability.

iii. Ho3: There is a positive relationship between Payable Turnover in Days (PTD) and the Profitability of the firm.

This hypothesis states that the less time the firm has to pay its supplier the less profit it can generate and vice versa, the longer the time the firm can wait to settle its duties to suppliers the more profit its entitled to generate. Accordingly, Makori and Jagongo (2013), found a positive relationship between the profitability and days' of account payable.

iv. Ho4: There is a negative relationship between Cash Conversion Cycle (CCC) and the Profitability of the firm.

This hypothesis states that in total the less time the cash conversion cycle takes the more profit the firm can generate and the longer cash conversion cycle the lower the profitability of the firm will be. Accordingly, Raheman and Nasr (2007) found out in there research that there is a strong negative relationship between the cash conversion cycle (CCC) and the firm's profitability.

5. Research Methodology:

In order to determine the relationship between working capital management and the profitability of the firm, the study will process the secondary data of the sampled firms using Pearson's correlation model and the ordinary least squared regression OLS model in order to examine the significance of the relationships.

6. Sample data and Variables:

6.1. The sample data:

The study used two sets of secondary data which in total both include 54 listed firms around the two continents: Middle East and West Europe. The Middle East sample has 27 listed firms across several sectors (food, several industries, retail and real estate) and covering five main countries in the region which are (Saudi Arabia KSA, Qatar, United Arab Emirates UAE, Egypt and Bahrain). The distribution of the sampled Middle East firms were as the following: (11 firms listed in KSA - Tadawul Stock Exchange, 7 firms listed in Qatar - Qatar Stock Exchange, 2 firms listed in United Arab Emirates - Abu Dhabi Securities Exchange, 5 firms listed in Egypt - The Egyptian Exchange and 2 firms listed in Bahrain – Bahrain Bourse). The data of the annual financial reports for two years (2012 and 2013) for all the sampled Middle East firms where collected form the Arabic Database of Argaam Business Info Company. While the sample of West Europe included equally 27 listed firms covering several sectors across six different European countries which are (Belgium, Portugal, France, Netherlands, Germany and UK). The distribution of the sampled European firms were as the following: (4 firms listed in Paris Stock Exchange – France, 3 firms listed in Amsterdam Stock Exchange – Netherlands, 5 firms listed in Lisbon Stock Exchange – Portugal, 1 firm listed in Xetra Stock Exchange – Germany, 7 firms listed in Brussels Stock Exchange – Belgium and 7 firms listed in UK - London Stock Exchange). The data of the annual reports for two years (2012 and 2013) for all the sampled Western European firms were collected from the US edition of Reuters database website "reuters.com/finance" except for the Marks & Spencer Group, their data were collected form "finance. Yahoo" database.

Due to their special working conditions, all firms from all sectors of financial, banking, insurance and all other services were excluded from both samples. Additionally, the sampling process had two constrains. The first one, was that most of the listed companies in the Middle East were basically from financial, banking or services sector, thus, we could not include them in our sample due to their special working conditions. The second constrain, was that the availability of data. There was a clear shortage in data disclosure for the listed firms rather than non-listed firms in the Middle East.

The table 2 below shows the list of the Middle East sampled firms:

Table 2 - Middle East Sample Firms

Middle East Sample - 27 Firms	
1. Almarai	KSA
2. Saudi Electricity Company	KSA
3. Ma'aden (Saudi Arabian Mining Company)	KSA
4. Saudi Chemical Co.	KSA
5. Nadec	KSA
6. Safco	KSA
7. National Gas & Industrial Co.	KSA
8. City Cement	KSA
9. Jouf Cement	KSA
10. Thimar	KSA
11. Jarir Bookstore	KSA
12. Qatar Fuel (Woqod)	Qatar
13. Qatar Electricity and Water Co.	Qatar
14. Qatar National Cement Company	Qatar
15. Mannai Corporation	Qatar
16. Aamal Co.	Qatar
17. Qatar Industrial Manufacturing Co. - Q.S.C.	Qatar
18. Industries Qatar Company	Qatar
19. RAK Ceramics	Abu Dhabi
20. Union Cement Company	Abu Dhabi
21. Juhayna	Egypt
22. Ezz Steel	Egypt
23. Oriental Weavers	Egypt
24. EIPICO	Egypt
25. SIDPEC Sidi Kerir Petrochemicals Co.	Egypt
26. United Gulf Investment Corporation B.S.C.	Bahrain
27. Aluminium Bahrain (ALBA) B.S.C.	Bahrain

Source Author's own

And the table 3 below shows the list of the European sampled firms:

Table 3 - West Europe Sample Firms

West Europe Sample - 27 Firms	
1. Pernod Ricard SA (PERP.PA)	France
2. L'Oreal SA (OREP.PA)	France
3. Total SA (TOTF.PA)	France
4. GDF Suez SA (GSZ.PA)	France
5. Koninklijke Philips NV (PHG.AS)	Netherlands
6. Heineken NV (HEIN.AS)	Netherlands
7. Mota Engil Africa NV (MEAFR.AS)	Netherland
8. Semapa Sociedade de Investimento e Gestao SGPS SA	Portugal
9. Teixeira Duarte SA (TDSA.LS)	Portugal
10. Portucel SA (PTI.LS)	Portugal
11. Galp Energia SGPS SA (GALP.LS)	Portugal
12. EDP Energias de Portugal SA (EDP.LS)	Portugal
13. Adidas AG (ADSGn.DE)	Germany
14. Umicore SA (UMI.BR)	Belgium
15. UCB SA (UCB.BR)	Belgium
16. Solvay SA (SOLB.BR)	Belgium
17. Elia System Operator SA (ELI.BR)	Belgium
18. Delhaize Group SA (DELB.BR)	Belgium
19. D'Ieteren SA (IETB.BR)	Belgium
20. Bekaert NV (BEKB.BR)	Belgium
21. 7 Digital Group plc (7DIG.L)	UK
22. London Security PLC (LSC.L)	UK
23. Ab Dynamics PLC (ABDP.L)	UK
24. Abcam PLC (ABCA.L)	UK
25. Marks & Spencer Group PLC (MKS.L)	UK
26. Amara Mining PLC (AMARA.L)	UK
27. ZincOx Resources PLC (ZOX.L)	UK

Source Author's own

6.2. The variables:

In order to determine the relations between working capital measures and profitability of the company, the study classified the variables to be tested into three categories as the following:

6.2.1. *Dependent variables*:

The study considered profitability in term of Return on Assets (ROA) as the dependent variable of the research and calculated according to the following equation:

$$Retun\ on\ Assets\ (ROA) = \frac{Net\ Income}{Total\ Assets} \qquad (1)$$

6.2.2. Independent variables:

For studying the working capital management, the study considered all the Cash Conversion Cycle (CCC) components which are [Receivable Turnover in Days (RTD), Payable Turnover in Days (PTD) and Inventory Turnover in Days (ITD)] including CCC all as the independent variables of the study. All the independent variables are calculated respectively, according to the following equations (considering the number of days in the year is 365):

$$Receivable\ Turnover\ in\ Days\ (RTD) = \frac{Receivables \times Days\ in\ the\ year}{Annual\ Credit\ Sales} \qquad (2)$$

$$Payable\ Turnover\ in\ Days\ (PTD) = \frac{Accounts\ Payables \times Days\ in\ the\ year}{Annual\ Credit\ Purchases} \qquad (3)$$

$$Inventory\ Turnover\ in\ Days\ (ITD) = \frac{Inventory \times Days\ in\ the\ year}{Cost\ of\ Goods\ Sold} \qquad (4)$$

$$Cash\ Converison\ Cycle\ (CCC) = ITD + RTD - PTD \qquad (5)$$

6.2.3. Control variables:

The study also considered three additional variables, due to the probability of some other factors could also affect the profitability of firms. The study considered all of: the firm size, the debt ratio and sales growth as the control variables.

6.2.3.1. The Firm Size:

Deloof (2003), Raheman and Nasr (2007), Sharma and Kumar (2011), were from many other researchers who considered firm size as a control variable for their studies. Basically, the firm size were considered because according to the variation of the firm size has a direct effect on the firm ability to make deals. Therefore, large firms can buy large amounts of certain products so they enjoy the discounts and special offers, also the (economies of scale benefits) since they can bear paying for big deals, while small companies cannot. Additionally, the size of the firm has a large effect on its ability to attain a better offer from suppliers or less favorable one, where big firms have the market power to bargain and get a longer time to pay their debts to suppliers, while small firms do not have this feature regarding their low credit rating. Thus, they will not have enough time to pay their duties to suppliers, and the firm size (SIZE) will be calculated as (the natural logarithm of sales).

6.2.3.2. The Debt Ratio:

The Debt ratio (Leverage) shows the percentage of the firm's asset that is funded by external debt, and it was used as a control variable by many authors like Deloof (2003), Raheman and Nasr (2007), Sharma and Kumar (2011). The main known interoperation for this ratio is that when it has a high percentage then it shows that the firm is using more leverage and accordingly it is taking higher risk. If the firm with its income before interest and taxes could not settle its debt duties, then that could harm the firm profitability and cause major losses. This ratio will be calculated according to the following equation:

$$Debt\ Ratio\ = \frac{Total\ Liabilities}{Total\ Assets}$$

6.2.3.3. The Firm's Growth:

Many researches like Sharma and Kumar (2011), Deloof (2003), Mansoori and Muhammad, (2012) had considered the firm's growth rate as a control variable in their studies. Where the firm's growth (GROW) shows us the quantity of increase in the firm's sales within specific period of time and it is measured according to the following equation:

$$\frac{(Sales1 - Sales0)}{Sales0}$$

7. Descriptive statistics:

7.1. Return on Assets:

Table 4 - Return on Assets

	Return on Assets				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	0.09	10.70%	38.54%	0.04%
EU	54	0.20	6.51%	102.74%	-53.73%
ALL	108	0.16	8.60%	102.74%	-53.73%

Source Author's own

As it is shown in the table number (4) the descriptive statistics of profitability in term of return on assets showed that, the maximum value of return on assets for the Middle East sample is 38.54% which was less than half of the maximum value of return on assets for the European firms' sample which was 102.74%. On the other hand, the minimum value of return on assets for the European firms is -53.73% which is less than the minimum value of return on assets for the Middle East firms which was 0.04%.

The descriptive statistics also for profitability in term of return on assets, it showed a value of standard deviation for the European firms is 0.20 which is around double the value of standard deviation for the Middle East firms which was 0.09. While the average return on assets for the Middle East has a value of 10.70% which is higher than 6.51% which is the mean of return on assets for European firms. Indicating that firms in the Middle East have a higher ability to generate profit using their assets resources than European companies have.

For the sum of both samples, the descriptive analysis showed, as it is specified in the table above. On average, return on assets has a value of 8.6% for both samples combined. While the standard deviation of return on assets has a value of 0.16. Remarkably, the maximum value of return on assets for the sum of both samples was 102.74% while the minimum value was -53.73%.

7.2. Receivable Turnover in Days:

Table 5 - RTD

	RTD				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	59.81	82.63	255.25	12.33
EU	54	64.64	75.54	359.78	5.13
ALL	108	62.08	79.09	359.78	5.13

Source Author's own

As it is shown in table number (5) the descriptive statistics for the receivable turnover in days (RTD). The European firms' sample showed that the maximum value of RTD was 359.75 days, which was around 100 days more than the maximum value of RTD for the Middle East sampled firms which was 255.25 days. Additionally, the minimum value of RTD for the European firms' sample is 5.13 days which is lower than the minimum value of RTD for the Middle East sampled firms which is 12.33 days. Showing that the range of RTD for the European sample is larger than the range of RTD for the Middle East sampled firms. Giving a range for the whole combined sample is between 5.13 days as a minimum and 359.78 days as a maximum.

The descriptive statistics for RTD also showed that the Middle East sample has a mean value of 82.63 days, which mean on average companies in the Middle East takes 82.63 days to collect the credit sales in cash, with a standard deviation of 59.81. The European sample showed that RTD has a mean value of 75.54 days which is slightly lower than the mean of RTD for the Middle East firms, meaning that firms in Europe takes on average around 75.54 days to collect their credit sales in cash, with standard deviation value of 64.64.

7.3. Payable Turnover in Days:

Table 6 - PTD

	PTD				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	101.18	120.57	526.42	29.50
EU	54	79.10	90.48	411.07	3.13
ALL	108	91.64	105.52	526.42	3.13

Source Author's own

As it is shown in the table number (6) the descriptive statistics of the Payable Turnover in Days, in the Middle East showed that firms take a maximum of 526.42 days to payback their debts in cash and a minimum of 29.50 days. While on average firms in the Middle East take 120.57 days to payable their debts in cash, with a value of standard deviation of 101.18.

According to the European sampled firms, the maximum value of Payable Turnover in Days (PTD) is 411.07 days and a minimum value of 3.13 days, which shows that in Europe the range of PTD is bigger than the range of PTD in the Middle East. While the mean value of PTD for the European sample has a value of 90.48 days with a standard deviation value of 79.10, meaning that firms in Europe take on average 90.48 days to payback their debts in cash, which is less time than the average of PTD in the Middle East.

Considering all 108 observations for both samples together, we can notice clearly that the maximum value of PTD is 526.42 days, meaning that the maximum time that all firms in our sample take to pay their financial duties back is 526.42 days and the minimum is 3.13 days. While on average, all firms included in both samples have a mean value 105.52 days to pay the debts back in cash, with a standard deviation value of 91.64.

7.4. Inventory Turnover in Days:

Table 7 - ITD

	ITD				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	69.23	117.46	292.78	9.39
EU	54	97.34	91.31	507.65	7.71
ALL	108	85.09	104.39	507.65	7.71

Source Author's own

As it is shown in table number (7) the descriptive statistics of the Inventory turnover in days for the Middle East sample ranked a maximum value of 292.78 days for inventory to be turned into sales and a minimum value of 9.39 days. While for the European sample, the inventory turnover in days (ITD) ranked a higher maximum value of 507.65 days than the maximum value of the Middle East sample and even a lower minimum value of 7.71 days than the minimum value of the Middle East sample.

Additionally, on average, firms in the Middle East take 117.46 days to turn their inventory into sales, with a standard deviation of 69.23. While the mean value of Inventory turnover in days for the European sample is 91.31 days with standard deviation value of 97.34. The

previous result means that firms in Europe take an average of 91.31 days to turn their inventory stock into sales and it is less time than what firms in the Middle East take. Showing a better efficiency in managing their inventory in Europe.

After taking all the 108 observations of both samples as a whole, it is clear to notice that the minimum value of ITD that both samples combined ranked is 7.71 days and the maximum value of ITD for is observably 507.65. While on average both firms in Europe and the Middle East has a mean value of 104.39 days, meaning that on average the inventory stays at stocks around 104.39 days to be turned into sales with a standard deviation value of 85.09.

7.5. Cash Conversion Cycle:

Table 8 - CCC

	CCC				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	109.75	79.52	284.12	-200.03
EU	54	98.65	76.38	441.31	-111.60
ALL	108	103.87	77.95	441.31	-200.03

Source Author's own

As the descriptive statistics of the Cash Conversion Cycle (CCC) in table number (8) showed for the Middle East sample, the maximum value of CCC is 284.12 days, meaning that firms in the middle east takes a maximum of 284.12 days for cash to be converted into cash again from the day the pay cash to their suppliers to the days they receive cash from their customers. On the other hand, in the Middle East the minimum value of CCC is -200.03 days, meaning that the firm is functioning perfectly in term of managing its cash, since it receives cash from their customers -200.03 days before it pays its suppliers for the inventory that already has been sold to these customers.

For the European sample, the Cash Conversion Cycle (CCC) ranked a higher maximum value of 441.31 days than the maximum value of the Middle East sample, meaning that firms in Europe take a maximum of 441.31 days to converts their cash from the day they pay their payable in cash to the day they receive their receivables in cash. Additionally, the European sample ranked a minimum value of -111.60 for CCC, meaning that the firm is efficient in managing their cash flows, where they can receive their cash for the sold inventory in 111.60 before they even pay for their supplier to that sold good.

Firms in the Middle East have on average 79.52 days as a mean value of CCC with a standard deviation value of 109.75. The previous result means that on average it takes a

firm in the Middle East 79.52 days to convert its cash outflow into cash inflow. While for firms in Europe, the CCC on average has a mean value of 76.38 days with a standard deviation value of 98.65, which is very close to the mean value of CCC for the Middle East sampled firms. The previous result means that on average firms in Europe take around 76.38 days to convert their cash outflow from the day they pay cash to their suppliers to a cash inflow which is the day they receive cash from their customers.

For all the 108 observations of both samples combined, it is clear to notice that the maximum value of CCC is 441.31 days and the minimum value of CCC is -200.03 days. While on average CCC has a value of 77.95 days with a standard deviation value of 103.87, meaning that on average firms for both samples combined take 77.95 days as a cash conversion cycle.

7.6. Debt ratio:

Table 9 - Debt Ratio

	Debt Ratio				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	0.23	39.06%	82.75%	2.93%
EU	54	0.27	58.70%	152.09%	14.81%
ALL	108	0.27	48.88%	152.09%	2.93%

Source Author's own

As the descriptive statistics of the debt ratio shows in table 9, the maximum value of debt ratio ranked by the Middle East sample is 82.75% meaning that 82.75% of the total asset is financed by debt while on minimum it is 2.93%. For the European sampled firms the maximum value of debt ratio is 152.09% almost double the maximum value of debt ratio for the Middle East sample. Additionally, the minimum value of debt ratio for the European sample is 14.81% which is also higher than the minimum value of debt ratio for the Middle East sample.

In the Middle East, firms have an average of 39.06% of debt ratio and standard deviation value of 0.23, meaning that 39.06% of total asset is financed by total debt, which is less than half, and it is moderate value. According to the European sample, firms in Europe have an average of 58.70% of debt ratio with a standard deviation value of 0.27, meaning that 58.70% of total asset is financed by total debt, which is more than half the total assets is financed by debt, and it is higher than the mean value of debt ratio for Middle East firms, showing that firms in Europe depend on debt funds more that equities to finance their assets.

For all the 108 observations combined it is clear to see that the maximum value of the debt ratio is 152.09% and the minimum value of debt ratio is 2.93%. While on average all firms of both samples have a mean value of 48.88% and a standard deviation value of 0.27 of debt ratio, meaning that on average 48.88% almost half of total assets for firms of both samples is financed by total debt, and it is a moderate rate.

7.7. Sales Growth:

Table 10 - Sales Growth

	Sales Growth				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	0.42	11.56%	268.24%	-62.81%
EU	54	0.47	11.92%	300.00%	-42.61%
ALL	108	0.44	11.74%	300.00%	-62.81%

Source Author's own

As the descriptive statistics of the sales growth in table number 10 showed, that for the Middle East sample, the maximum sales growth value is 268.24% which is really high value for a firm to grow its sales 268.24% in one year time. While the minimum sales growth is negative with a value of -62.81%, which mean on minimum firms in the Middle East, instead of growing their sales up, they grow down with -62.81% in one year time.

European firms functioned slightly better than Middle East firms in term of maximum and minimum value, where the maximum sales growth is 300% which is higher than the maximum value of sales growth for the Middle East sampled firms. European firms ranked a minimum value lower than the minimum value of sales growth ranked by firms in the Middle East, however, it was negative as well, with a value of -42.61%, meaning that according to our sample on minimum firms instead of recording an up growth in their sales volume they marked a down growth with -42.61% in one year time.

On average, firms in the Middle East marked a mean value of 11.56% of annual sales growth, with a standard deviation of 0.42, which is quite close value to the mean value marked by European sample, which is 11.92% annual sales growth, and a standard deviation of 0.47.

For all the 108 observations of both samples combined we found clearly that the maximum value of sales growth is 300% and the minimum value is -62.81%. On average all firms in our sample ranked a mean value of 11.74% for sales growth with a standard deviation of 0.44.

7.8. Firm's Size:

Table 11 - Firm's Size

	Firm's Size				
	Number of Observations	**Standard Deviation**	**Mean**	**Maximum**	**Minimum**
ME	54	2.45	8.38	17.32	4.40
EU	54	3.19	8.06	16.12	1.16
ALL	108	2.84	8.22	17.32	1.16

Source Author's own

As the descriptive statistics of the control variable firm's size (SIZE) shows in table (11), that in the Middle East sample the maximum firm's size value (natural logarithm of sales) has a value of 17.32 which is close to the maximum firm size value for the European sample, which is 16.12. The Minimum value of firm size for Middle East sampled firms was 4.40 which is more than 1.16 the minimum value of firm's size ranked by the European sampled firms.

On average firms in the Middle East have a firm's size mean value of 8.38 which is quite close to the mean value of firm's size for European sampled firms, which have a value of 8.06, meaning that both sampled firms in the Middle East and Europe were quite close in term of the value of firm's size. The values of standard deviation were 2.45 and 3.19 for the Middle East sampled firms and European sampled firms receptively.

For all the 108 observations of both samples together, the maximum value of firm's size is 17.32 and the minimum value is 1.16, with a mean value of 8.22 and 2.84 a value of standard deviation for all firms.

In order to have clearer overlook on each sample as well as the whole 108 observations, the next three tables combine these looks: table (12) shows the whole descriptive statistics for the Middle East sample only, and table (13) depicts the descriptive statistics for the European sample only, while table (14) combines the whole sample deceptive statistics in one table.

Table 12 - Middle East Sample Descriptive Statistics

	Middle East Sample Descriptive Statistics				
	Number of Observations	Standard Deviation	Mean	Maximum	Minimum
ROA	54	0.09	10.70%	38.54%	0.04%
RTD	54	59.81	82.63	255.25	12.33
PTD	54	101.18	120.57	526.42	29.50
ITD	54	69.23	117.46	292.78	9.39
CCC	54	109.75	79.52	284.12	-200.03
DEBT	54	0.23	39.06%	82.75%	2.93%
GROWTH	54	0.42	11.56%	268.24%	-62.81%
SIZE	54	2.45	8.38	17.32	4.40

Source Author's own

Table 13 - European Sample Descriptive Statistics

	European Sample Descriptive Statistics				
	Number of Observations	Standard Deviation	Mean	Maximum	Minimum
ROA	54	0.20	6.51%	102.74%	-53.73%
RTD	54	64.64	75.54	359.78	5.13
PTD	54	79.10	90.48	411.07	3.13
ITD	54	97.34	91.31	507.65	7.71
CCC	54	98.65	76.38	441.31	-111.60
DEBT	54	0.27	58.70%	152.09%	14.81%
GROWTH	54	0.47	11.92%	300.00%	-42.61%
SIZE	54	3.19	8.06	16.12	1.16

Source Author's own

Table 14 - The Total Sample Descriptive Statistics

	The Total Sample Descriptive Statistics				
	Number of Observations	Standard Deviation	Mean	Maximum	Minimum
ROA	108	0.16	8.60%	102.74%	-53.73%
RTD	108	62.08	79.09	359.78	5.13
PTD	108	91.64	105.52	526.42	3.13
ITD	108	85.09	104.39	507.65	7.71
CCC	108	103.87	77.95	441.31	-200.03
DEBT	108	0.27	48.88%	152.09%	2.93%
GROWTH	108	0.44	11.74%	300.00%	-62.81%
SIZE	108	2.84	8.22	17.32	1.16

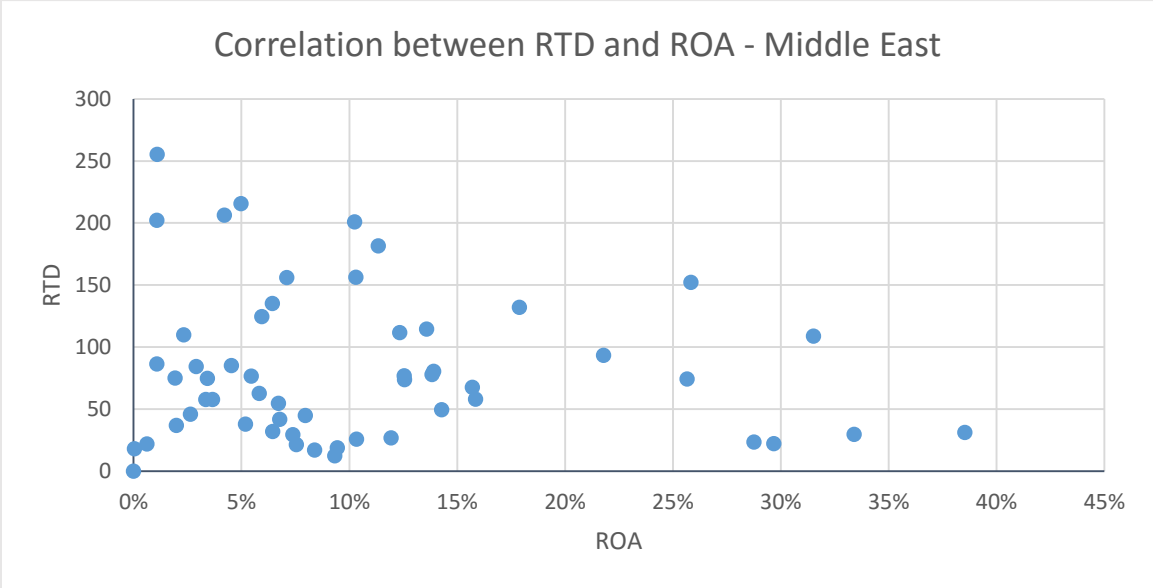
Source Author's own

8. Correlation Analysis:

In order to explore the effect of working capital management on the firms' profitability and the nature of the relationship, the study applied Pearson Correlation method between the Cash Conversion Cycle including all its factors and the Return on Assets for both the European and the Middle East sample, in addition to the total sample as well. The judging rule of correlation is: if the correlation value is greater than or equal to 0.70, meaning that there is a correlation between the two variables. If the P-Value of the correlation's test is equal or very close to zero, meaning that the correlation is statistically significant between the two analyzed variables.

8.1. The results of correlation analysis for the Middle East's sample:

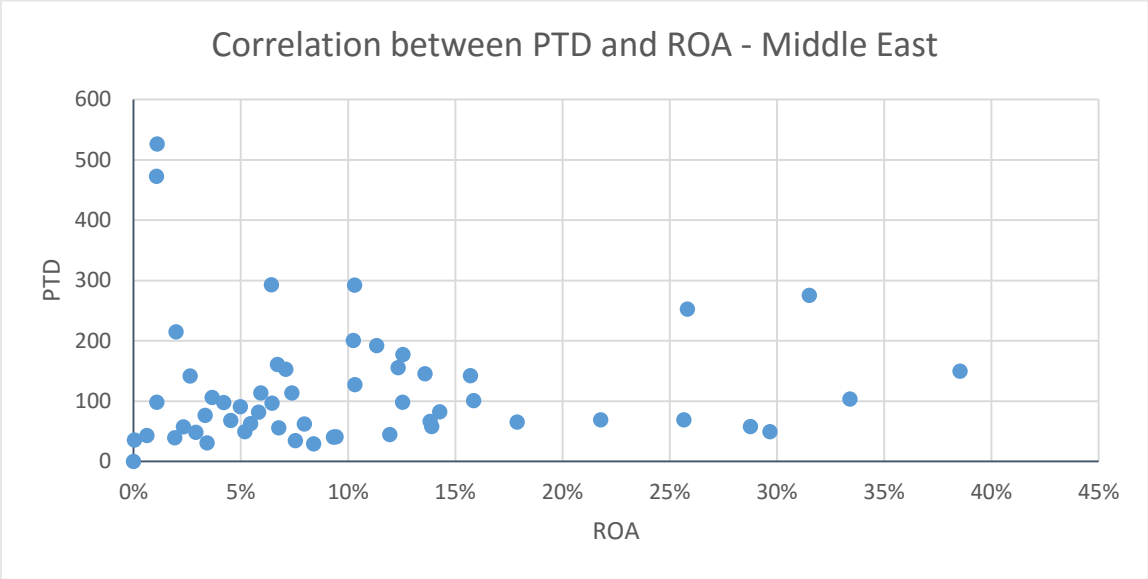
The correlation value between the return on assets and the receivable turnover in days is 0.15 with a (P-value = 0.27), showing that there is no correlation between these two variables since the value of correlation is very close to zero. Additionally, the P-value is far from zero meaning that it is even statistically insignificant relationship between the return on assets and the receivable turnover in days. The Graph 1 below, shows a large spread of inconsistency between Receivables Turnover Days and Return on Assets.



Graph 1 – Middle East Sample Correlation between RTD and ROA

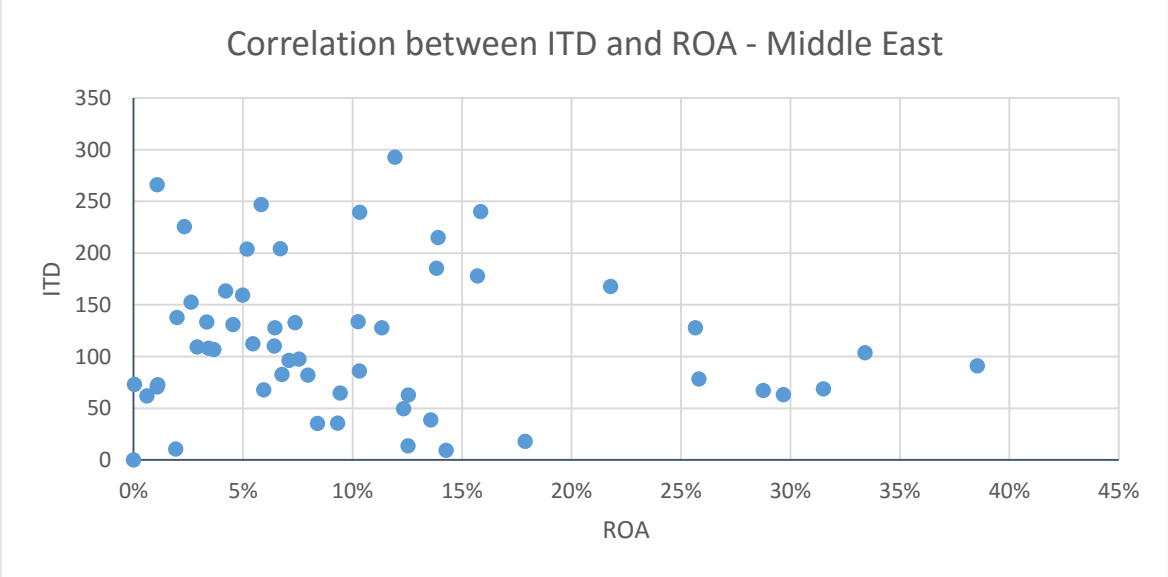
The correlation value between the return on assets and the payable turnover in days is equal to 0.02 with a (P-value=0.91), meaning that there is no significant correlation between the return on assets and the payable turnover in days, since the correlation value is very close to zero and far from 0.70 and the P-value is very far from zero. The

graph 2 below is showing the scatter plot in a way that depicts the nonexistence of any linear relationship between Payable Turnover in Days and Return on Assets.



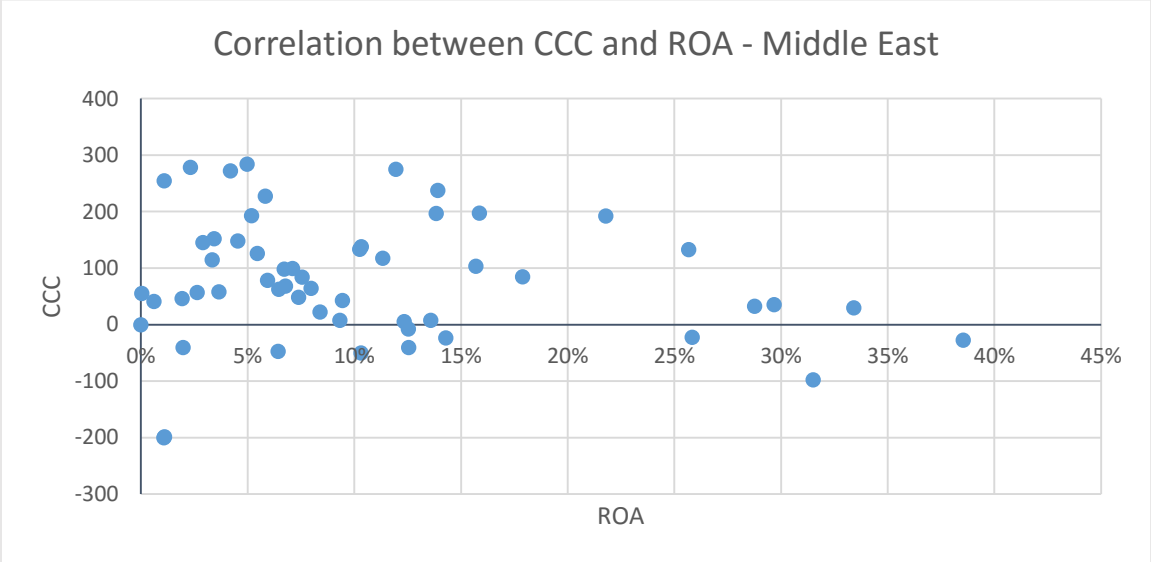
Graph 2 – Middle East Sample Correlation between PTD and ROA

The correlation value between the return on assets and the inventory turnover in days is equal to 0.15 with a (P-value=0.29), showing that there is no statistically significant correlation between these two variables, since the value of correlation is close to zero, and the P-value is far enough from zero. The graph 3 below shows a large spread of inconsistency between Inventory Turnover in Days and Return on Assets.



Graph 3 – Middle East Sample Correlation between ITD and ROA

The correlation value between the return on assets and the cash conversion cycle is equal to 0.16 which is very low, showing that there is no correlation between these two variables, with a (P-value = 0.24) meaning that statistically its insignificant relationship. The nonexistence of a significant correlation between return on assets as a measure of profitability and the cash conversion cycle goes in consistent with the previous none correlation results between return on assets and all the measures of cash conversion cycle which are (receivable turnover in days, payable turnover in days and inventory turnover in days). The graph number 4 below shows the nonexistence of any relationship between CCC and ROA.



Graph 4 – Middle East Sample Correlation between CCC and ROA

In total, exactly as the findings from the European sample shows, In the Middle East sampled firms the study found no significant correlation between the dependent variable return on assets and all the independent variables which are cash conversion cycle and all its measures which are (receivable turnover in days, payable turnover in days and inventory turnover in days). Table 15 summarizes the results of the correlation analysis for the Middle East sample:

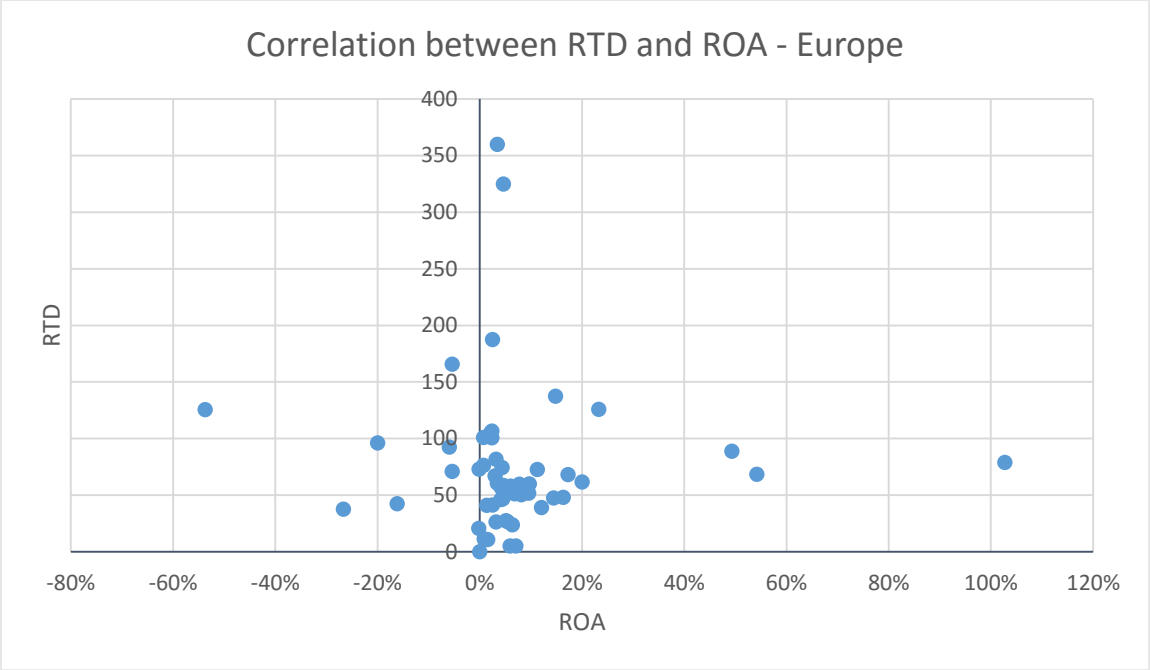
Table 15 - Correlation Results Middle East Sample

Correlation Results - Middle East Sample				
ROA	**RTD**	**PTD**	**ITD**	**CCC**
Correlation Value	0.15	0.02	0.15	0.16
P-Value	0.27	0.91	0.29	0.24

Source Author's own

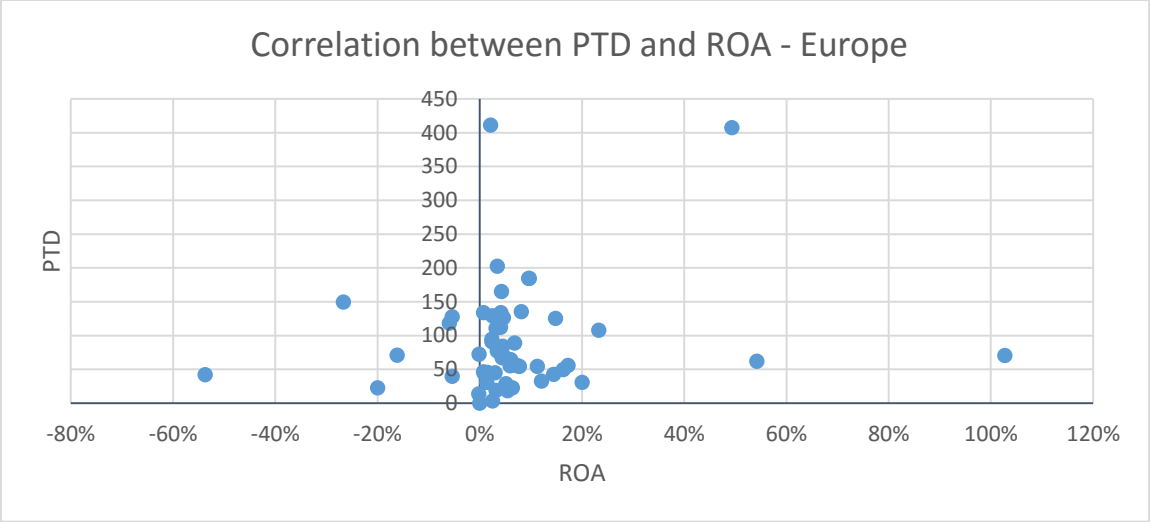
8.2. The results of correlation analysis for the European's sample:

The correlation value between the return on assets and the receivable turnover in days is 0.03 with (P-value = 0.80), meaning that there is no correlation at all between these the return on assets and the receivable turnover in days, because the value of correlation is almost equal to zero. Additionally, the P-value of the correlation's test is very far from zero, meaning that it is even statistically insignificant relationship. The graph number 5 below indicates the nonexistence of any relationship between RTD and ROA in the European's sample.



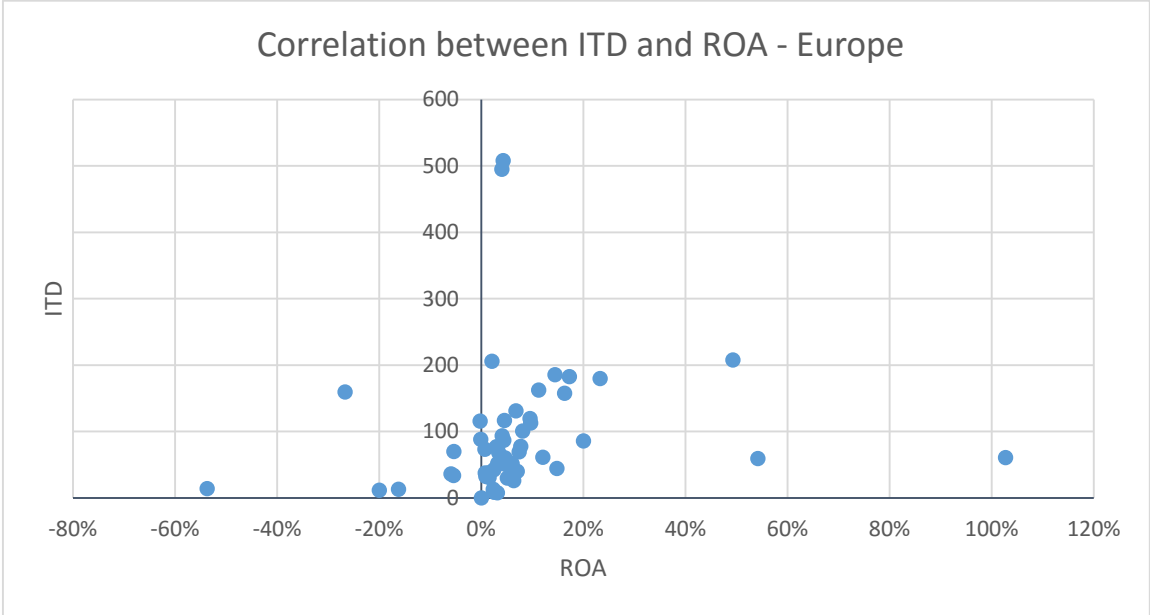
Graph 5 – Europe Sample Correlation between RTD and ROA

The correlation value between the return on assets and the payable turnover in days is 0.14 with a (P-value=0.30), showing that there is no correlation between the return on assets and the payable turnover in days, since the correlation value is greatly lower than 0.70. Additionally, the P-value is far from zero, meaning that there is no statistically significant correlation between the return on assets and the payable turnover in days. The graph 6 below indicates the nonexistence of any correlation between PTD and ROA in the European's sample.



Graph 6 – Europe Sample Correlation between PTD and ROA

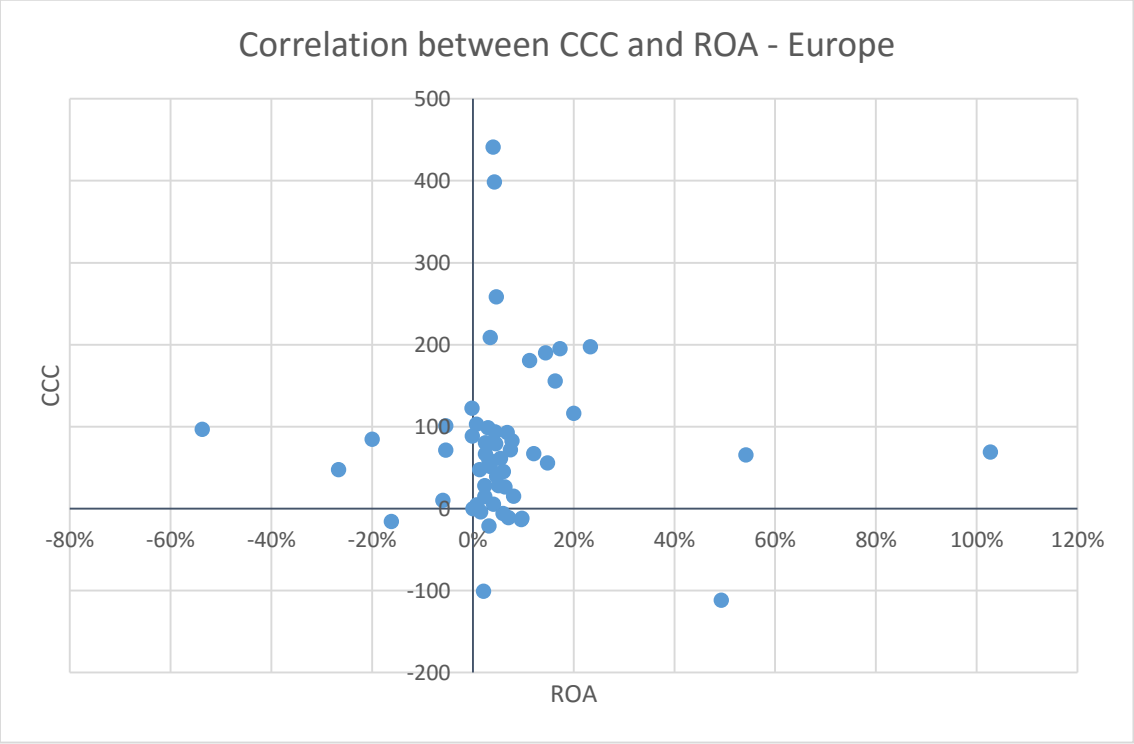
The correlation value between the return on assets and the inventory turnover in days is equal to 0.13, with a (P-value=0.36), showing that there is no statistically significant correlation between these return on assets and inventory turnover since the value of correlation is close to zero, and the P-value is far enough from zero. The graph 7 below shows the nonexistence of any correlation between ITD and ROA in the European's sample.



Graph 7 – Europe Sample Correlation between ITD and ROA

The correlation value between the return on assets and the cash conversion cycle is equal to 0.01 which is very low, showing that completely there is no correlation between these

two variables, with a P-value = 0.92 meaning that statistically its highly insignificant. The nonexistence of a significant correlation between return on assets as a measure of profitability and the cash conversion cycle goes in consistent with the previous none correlation results between return on assets and all the measures of cash conversion cycle which are (receivable turnover in days, payable turnover in days and inventory turnover in days). The following graph 8 shows the nonexistence of any relationship between CCC and ROA in the European's sample.



Graph 8 – Europe Sample Correlation between CCC and ROA

In total, according to the European sampled firms, we found no significant correlation between the dependent variable return on assets and all the independent variables which are cash conversion cycle including all its measure.

Table 16 summarizes the correlation results for the Europe Sample:

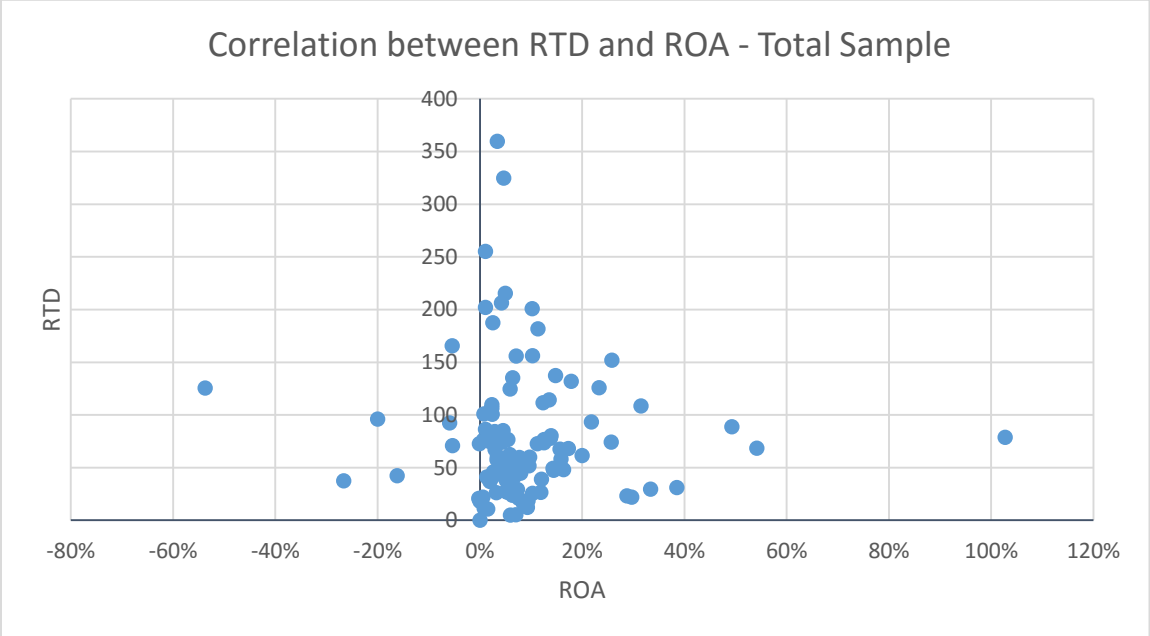
Table 16 - Correlation Results Europe Sample

Correlation Results - Europe Sample				
ROA	**RTD**	**PTD**	**ITD**	**CCC**
Correlation Value	0.03	0.14	0.13	0.01
P-Value	0.80	0.30	0.36	0.92

Source Author's own

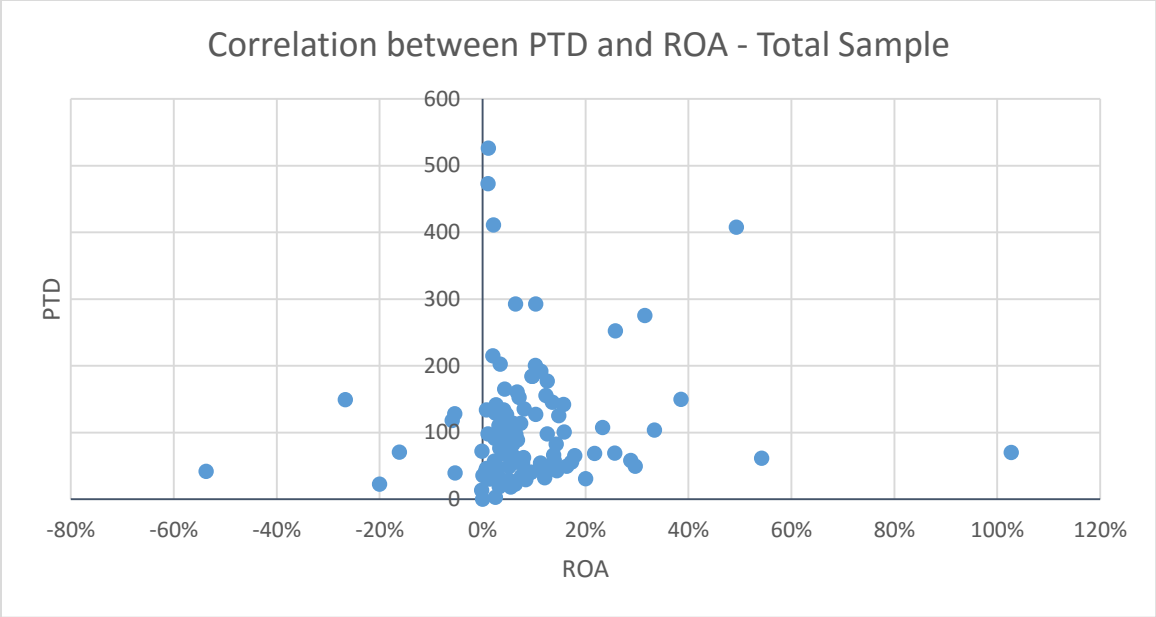
8.3. The results of correlation analysis for both of samples combined:

The correlation value between the return on assets and the receivable turnover in days is 0.06 with a (P-value = 0.55), meanings that there is no correlation between these two variables, since the value of correlation is very close to zero. Additionally, the P-value is far from zero meaning that it's even statistically insignificant relationship. The graph 9 below shows the nonexistence of any relationship between RTD and ROA in the total sample of our study.



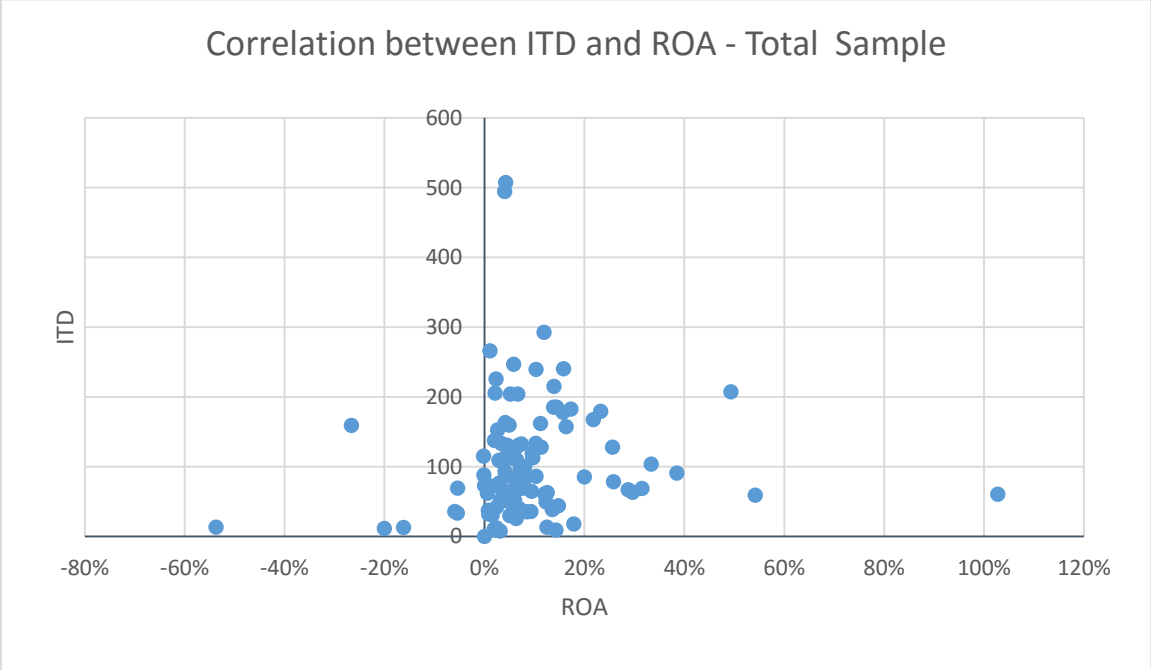
Graph 9 – Total Sample Correlation between RTD and ROA

The correlation value between the return on assets and the payable turnover in days is 0.10 with a (P-value=0.31), meaning that there is no significant correlation between the return on assets and the payable turnover in days, since the correlation value is very close to zero and far from 0.70 and the P-value is very far from zero. The graph 10 below shows the nonexistence of any relationship between PTD and ROA in the total sample of our study.



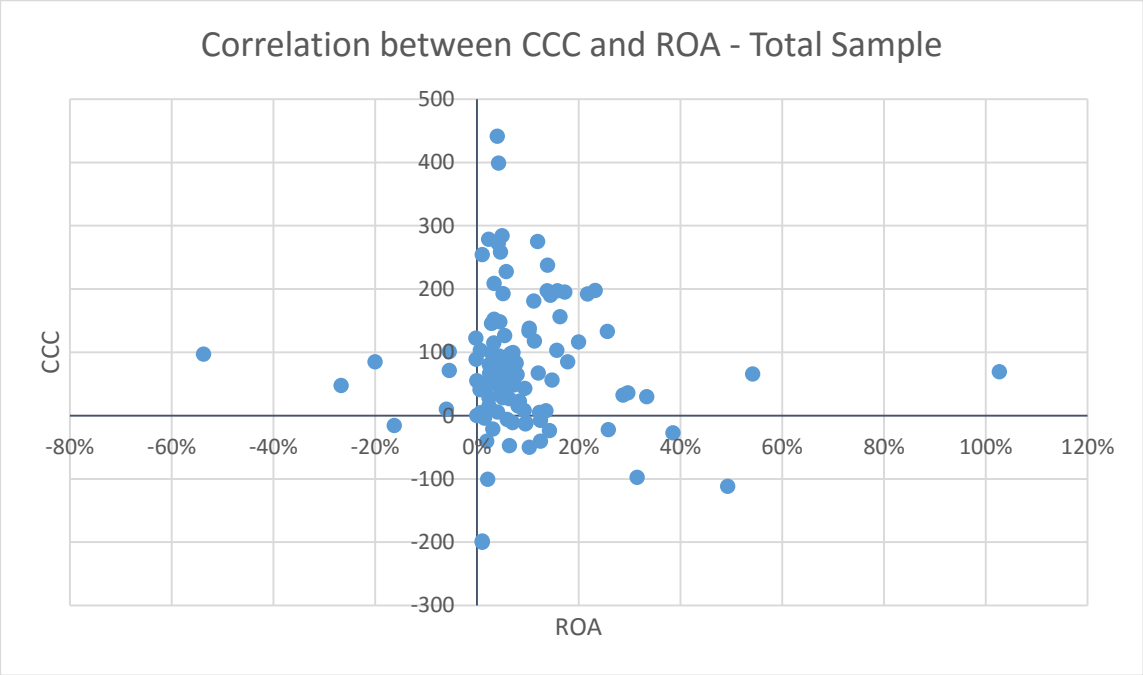
Graph 10 – Total Sample Correlation between PTD and ROA

The correlation value between the return on assets and the inventory turnover in days is equal to 0.08, with a (P-value=0.42), meaning that there is no statistically significant correlation between these two variables, since the value of correlation is close to zero, and the P-value is far enough from zero. The graph 11 below shows the nonexistence of any relationship between ITD and ROA in the total sample of our study.



Graph 11 – Total Sample Correlation between ITD and ROA

The correlation value between the return on assets and the cash conversion cycle is equal to 0.06 which is very low value, meaning that there is no correlation at all between these two variables, with a P-value = 0.56 meaning that statistically it is insignificant. The nonexistence of a significant correlation between return on assets as a measure of profitability and the cash conversion cycle goes in consistent with the previous none correlation results between the return on assets and all the measures of cash conversion cycle which are (receivable turnover in days, payable turnover in days and inventory turnover in days). The graph 12 below shows the nonexistence of any relationship between CCC and ROA in the total sample of our study.



Graph 12 – Total Sample Correlation between CCC and ROA

Table 17 summarizes the results of the correlation analysis for the total sample:

Table 17 - Total Sample Correlation Results

Correlation Results - Total Sample				
ROA	**RTD**	**PTD**	**ITD**	**CCC**
Correlation Value	0.06	0.10	0.08	0.06
P-Value	0.55	0.32	0.43	0.56

Source Author's own

In total, according to the correlation analysis results for both of our samples combined the European and the Middle East one, the study found that there is no significant correlation between the dependent variable which is the return on assets and all the

independent variables which are the cash conversion cycle including all its measure (receivable turnover in days, payable turnover in days and inventory turnover in days).

9. Conclusions and Discussion:

Previous researches predicted a negative relationship between working capital management precisely cash conversion cycle and the corporate profitability. Thus, it was expected to find a negative correlation between the dependent and independent variables of our study. However, based on the results of our study we indicate that there is no significant relationship between working capital management and profitability of firms. These results suggest that in order to maximize the shareholder wealth, managers need to emphasize on the other business principles such as improving the product or the service they sale.

The correlation analysis of the total sampled firms showed the following results: First, there is no significant relationship between the receivable turnover in days (RTD) and the return on assets (ROA). Thus, the study would not apply the proposed regression analysis on these two variables, due to the nonexistence of any significant correlation. This result is in consistent with the finding of Zawaira and Mutenheri (2014). Accordingly, we reject our first hypothesis (Ho1) which says that there is a negative relationship between the receivable turnover in days and the profitability of firms

Secondly, the study affirmed that there is no significant relationship between the inventory turnover in days (ITD) and the return on assets (ROA). Thus, the study would not test the regression analysis on these two variables, due to the nonexistence of a significant correlation. Our result with regard to the ITD is in consistent with the result of Tauringana and Afrifa (2013), where they found that Inventory holding period is not important in determining the profitability. Additionally, our result is also in consistent with the finding of Zawaira and Mutenheri (2014) and the finding of Gill et al. (2010). Accordingly, we reject our second hypothesis (Ho2) which states that there is a negative relationship between Inventory Turnover in Days (ITD) and the Profitability of the firm.

Thirdly, the study found that there is no significant relationship between the payable turnover in days (PTD) and the return on assets (ROA). Thus, the study would not apply the test of regression analysis on these two variables, due to the absence of a significant correlation between PTD and ROA. This result is in consistent with the finding of Gill et al. (2010). Accordingly, we reject our third hypothesis (Ho3) which states that there is a positive relationship between Payable Turnover in Days (PTD) and the Profitability of the firm.

Ultimately, the study found that there is no significant relationship between the cash conversion cycle (CCC) and the return on assets (ROA). Thus, the study would not test the regression analysis on these two variables, due to the absence of a significant correlation

between CCC and ROA. Our result with regard to the CCC is in consistent with the result of Tauringana and Afrifa (2013), where they found that Cash Conversion Cycle is not important in determining the profitability. Additionally, this result is in consistent with the finding of Zawaira and Mutenheri (2014) and the finding of Vahid et al. (2012). Accordingly, we reject our fourth hypothesis (Ho4) which states that is a negative relationship between Cash Conversion Cycle (CCC) and the Profitability of the firm.

The findings indicate that managers should not always look at their cash conversion cycle and its components in order to improve their profit. On the basis of our findings, the study also suggests that profitability cannot be enhanced solely using an efficient management of working capital.

The rejection of our hypothesis could be due to the following reasons: First the inconsistency of the previous research results led to a finding like ours. Second, all of the study sampled firms' were listed firms in the stock exchange of their countries. Due to that the strategy of listed firms differs from the nature of solely owned firms or even the partnerships, since the nature of their strategy and their ability to take risks vary and could have an effect on the relationship between working capital management and profitability. Thirdly, although the study used a broad range of variables, however, profitability can be measured in different ways. Our study measured profitability in term of the return on assets (ROA) in accordance with all of these authors: Akoto et al. (2013); Charitou et al. (2010); Makori and Jagongo (2013); Mansoori and Muhammad (2012); Mohamad and Saad (2010); Sharma and Kumar (2011). While profitability could be calculated using a different measure, such as: gross operating profit, or others.

Furthermore, the geographic location, strategies, size as well as the culture of the company are playing an important role in determining the factors which affect its profitability. According to Howorth and Westhead (2003), small firms emphasis solely on areas of working capital where they predict to enhance the marginal yields. Moreover, according to Wasiuzzaman (2015), the general consensus for studying the effect of working capital management may not work easily with different economic conditions, polices and cultural influences.

Ultimately, the results of this research are limited to the nature and size of the study's sample. The study suggests to further research this area by investigating different ways to manage the working capital and test their effectiveness in improving profitability. The study also suggests to develop other financial practices to improve profitability.

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Appendix:

Middle East Sample (27 firms)		
KSA - Tadawul Stock Exchange (11 firms)		
1. Almarai	**KSA**	
	2013	**2012**
Return on Assets	6%	7%
Receivable Turnover in Days (RTD)	31.82	29.24
Payable Turnover in Days (PTD)	96.84	113.62
Inventory Turnover in Days (ITD)	127.84	132.73
Cash Conversion Cycle (CCC)	62.82	48.35
Debt Ratio	64%	61%
Sales Growth	14%	24%
Firm Size	9.325380093	9.198571388
2. Saudi Electricity Company	**KSA**	
	2013	**2012**
Return on Assets	1%	1%
Receivable Turnover in Days (RTD)	255.25	202.13
Payable Turnover in Days (PTD)	526.42	472.83
Inventory Turnover in Days (ITD)	72.75	70.67
Cash Conversion Cycle (CCC)	-198.42	-200.03
Operating Cycle	328.00	272.80
Debt Ratio	80%	77%
Sales Growth	6%	10%
Firm Size	10.48	10.42
3. Ma'aden (Saudi Arabian Mining Company)	**KSA**	
	2013	**2012**
Return on Assets	3%	2%
Receivable Turnover in Days (RTD)	45.90	36.85
Payable Turnover in Days (PTD)	141.45	214.80
Inventory Turnover in Days (ITD)	152.74	137.66
Cash Conversion Cycle (CCC)	57.18	-40.29
Operating Cycle	198.63	174.52
Debt Ratio	69%	67%
Sales Growth	8%	268%

Firm Size	8.71	8.63
Current Ratio	109%	185%
4. Saudi Chemical Co.	**KSA**	
	2013	**2012**
Return on Assets	10%	11%
Receivable Turnover in Days (RTD)	200.78	181.61
Payable Turnover in Days (PTD)	200.83	191.99
Inventory Turnover in Days (ITD)	133.62	127.84
Cash Conversion Cycle (CCC)	133.57	117.46
Operating Cycle	334.40	309.45
Debt Ratio	49%	44%
Sales Growth	14%	7%
Firm Size	7.73	7.60
5. Nadec	**KSA**	
	2013	**2012**
Return on Assets	3%	4%
Receivable Turnover in Days (RTD)	57.58	57.60
Payable Turnover in Days (PTD)	76.55	106.25
Inventory Turnover in Days (ITD)	133.44	106.94
Cash Conversion Cycle (CCC)	114.47	58.29
Operating Cycle	191.01	164.54
Debt Ratio	62%	59%
Sales Growth	12%	11%
Firm Size	7.56	7.45
6. Safco	**KSA**	
	2013	**2012**
Return on Assets	33%	39%
Receivable Turnover in Days (RTD)	29.46	31.01
Payable Turnover in Days (PTD)	103.55	149.67
Inventory Turnover in Days (ITD)	103.70	91.05
Cash Conversion Cycle (CCC)	29.60	-27.61
Operating Cycle	133.16	122.06
Debt Ratio	13%	12%
Sales Growth	-15%	-1%
Firm Size	8.35	8.51
7. National Gas & Industrial Co.	**KSA**	

	2013	2012
Return on Assets	8%	9%
Receivable Turnover in Days (RTD)	16.81	12.33
Payable Turnover in Days (PTD)	29.50	40.27
Inventory Turnover in Days (ITD)	35.34	35.74
Cash Conversion Cycle (CCC)	22.66	7.80
Operating Cycle	52.16	48.07
Debt Ratio	26%	27%
Sales Growth	2%	5%
Firm Size	7.49	7.47
8. City Cement	**KSA**	
	2013	**2012**
Return on Assets	10%	12%
Receivable Turnover in Days (RTD)	25.66	26.70
Payable Turnover in Days (PTD)	127.18	44.60
Inventory Turnover in Days (ITD)	239.65	292.78
Cash Conversion Cycle (CCC)	138.13	274.89
Operating Cycle	265.31	319.49
Debt Ratio	5%	3%
Sales Growth	1%	3%
Firm Size	6.07	6.06
9. Jouf Cement	**KSA**	
	2013	**2012**
Return on Assets	2%	5%
Receivable Turnover in Days (RTD)	109.71	37.84
Payable Turnover in Days (PTD)	57.13	49.26
Inventory Turnover in Days (ITD)	225.70	204.12
Cash Conversion Cycle (CCC)	278.28	192.69
Operating Cycle	335.41	241.95
Debt Ratio	41%	33%
Sales Growth	-20%	17%
Firm Size	5.68	5.91
10. Thimar	**KSA**	
	2013	**2012**
Return on Assets	18%	2%
Receivable Turnover in Days (RTD)	131.94	74.96

Payable Turnover in Days (PTD)	65.41	39.44
Inventory Turnover in Days (ITD)	18.15	10.49
Cash Conversion Cycle (CCC)	84.68	46.00
Operating Cycle	150.09	85.44
Debt Ratio	33%	30%
Sales Growth	37%	49%
Firm Size	4.72	4.40
11. Jarir Bookstore	**KSA**	
	2013	**2012**
Return on Assets	30%	29%
Receivable Turnover in Days (RTD)	22.01	23.30
Payable Turnover in Days (PTD)	49.66	58.02
Inventory Turnover in Days (ITD)	63.30	67.25
Cash Conversion Cycle (CCC)	35.66	32.52
Operating Cycle	85.32	90.54
Debt Ratio	47%	48%
Sales Growth	13%	12%
Firm Size	8.56	8.44
Qatar - Qatar Stock Exchange (7 firms)		
12. Qatar Fuel (Woqod)	**Qatar**	
	2013	**2012**
Return on Assets	13%	14%
Receivable Turnover in Days (RTD)	76.80	49.35
Payable Turnover in Days (PTD)	98.10	82.43
Inventory Turnover in Days (ITD)	13.52	9.39
Cash Conversion Cycle (CCC)	-7.77	-23.69
Operating Cycle	90.33	58.74
Debt Ratio	35%	32%
Sales Growth	0	22.40%
Firm Size	9.46	9.46
13. Qatar Electricity and Water Co.	**Qatar**	
	2013	**2012**
Return on Assets	13%	6%
Receivable Turnover in Days (RTD)	73.59	135.21
Payable Turnover in Days (PTD)	177.19	292.88
Inventory Turnover in Days (ITD)	62.98	110.32

Cash Conversion Cycle (CCC)	-40.62	-47.34
Operating Cycle	136.57	245.53
Debt Ratio	45%	83%
Sales Growth	2.33%	-35.39%
Firm Size	7.97	7.95
14. Qatar National Cement Company	**Qatar**	
	2013	**2012**
Return on Assets	16%	16%
Receivable Turnover in Days (RTD)	67.44	57.99
Payable Turnover in Days (PTD)	142.19	101.09
Inventory Turnover in Days (ITD)	177.94	240.34
Cash Conversion Cycle (CCC)	103.19	197.24
Operating Cycle	245.38	298.33
Debt Ratio	7%	9%
Sales Growth	4.13%	-2.56%
Firm Size	6.91	6.87
15. Mannai Corporation	**Qatar**	
	2013	**2012**
Return on Assets	7%	6%
Receivable Turnover in Days (RTD)	54.51	62.51
Payable Turnover in Days (PTD)	160.81	81.96
Inventory Turnover in Days (ITD)	204.36	247.08
Cash Conversion Cycle (CCC)	98.06	227.63
Operating Cycle	258.87	309.59
Debt Ratio	67%	67%
Sales Growth	17.50%	108.37%
Firm Size	8.63	8.47
16. Aamal Co.	**Qatar**	
	2013	**2012**
Return on Assets	6%	7%
Receivable Turnover in Days (RTD)	124.59	155.94
Payable Turnover in Days (PTD)	113.84	152.82
Inventory Turnover in Days (ITD)	67.91	96.18
Cash Conversion Cycle (CCC)	78.66	99.31
Operating Cycle	192.50	252.13

Debt Ratio	19%	24%
Sales Growth	2.57%	8.33%
Firm Size	7.66	7.63
17. Qatar Industrial Manufacturing Co. - Q.S.C.	**Qatar**	
	2013	**2012**
Return on Assets	12%	14%
Receivable Turnover in Days (RTD)	111.56	114.36
Payable Turnover in Days (PTD)	155.76	145.43
Inventory Turnover in Days (ITD)	49.43	38.79
Cash Conversion Cycle (CCC)	5.23	7.72
Operating Cycle	160.99	153.15
Debt Ratio	14%	15%
Sales Growth	-1.42%	8.36%
Firm Size	5.85	5.87
18. Industries Qatar Company	**Qatar**	
	2013	**2012**
Return on Assets	22%	26%
Receivable Turnover in Days (RTD)	93.30	74.31
Payable Turnover in Days (PTD)	68.85	69.27
Inventory Turnover in Days (ITD)	167.66	128.00
Cash Conversion Cycle (CCC)	192.10	133.04
Operating Cycle	260.96	202.30
Debt Ratio	8%	8%
Sales Growth	-5.38%	-62.81%
Firm Size	8.67	8.72
Current Ratio	1080%	973%
UAE - Abu Dhabi Securities Exchange (2 firms)		
19. RAK Ceramics	**Abu Dhabi**	
	2013	**2012**
Return on Assets	5%	4%
Receivable Turnover in Days (RTD)	215.59	206.25
Payable Turnover in Days (PTD)	91.04	97.63
Inventory Turnover in Days (ITD)	159.56	163.42
Cash Conversion Cycle (CCC)	284.12	272.04
Operating Cycle	375.16	369.67
Debt Ratio	56%	60%

Sales Growth	10.94%	-5.05%
Firm Size	8.16	8.06
20. Union Cement Company	**Abu Dhabi**	
	2013	**2012**
Return on Assets	7.55%	9.44%
Receivable Turnover in Days (RTD)	21.20	18.72
Payable Turnover in Days (PTD)	34.52	40.67
Inventory Turnover in Days (ITD)	97.59	64.64
Cash Conversion Cycle (CCC)	84.27	42.69
Operating Cycle	118.78	83.37
Debt Ratio	50.23%	42.30%
Sales Growth	15.37%	27.25%
Firm Size	8.10	7.96
22. Ezz Steel	**Egypt**	
	2013	**2012**
Return on Assets	0.61%	0.04%
Receivable Turnover in Days (RTD)	21.86	17.98
Payable Turnover in Days (PTD)	42.88	35.72
Inventory Turnover in Days (ITD)	62.08	72.97
Cash Conversion Cycle (CCC)	41.06	55.23
Operating Cycle	83.94	90.95
Debt Ratio	78.08%	77.27%
Sales Growth	7.55%	6.39%
Firm Size	9.97	9.89
23. Oriental Weavers	**Egypt**	
	2013	**2012**
Return on Assets	5.45%	4.53%
Receivable Turnover in Days (RTD)	76.52	85.12
Payable Turnover in Days (PTD)	62.66	67.84
Inventory Turnover in Days (ITD)	112.25	130.99
Cash Conversion Cycle (CCC)	126.11	148.27
Operating Cycle	188.77	216.11
Debt Ratio	48.08%	50.12%
Sales Growth	12.80%	6.21%
Firm Size	8.62	8.50
24. EIPICO	**Egypt**	

	2013	2012
Return on Assets	13.91%	13.83%
Receivable Turnover in Days (RTD)	80.28	77.82
Payable Turnover in Days (PTD)	58.03	66.31
Inventory Turnover in Days (ITD)	215.16	185.45
Cash Conversion Cycle (CCC)	237.41	196.96
Operating Cycle	295.44	263.27
Debt Ratio	20.87%	33.53%
Sales Growth	8.17%	7.71%
Firm Size	7.21	7.13
25. SIDPEC Sidi Kerir Petrochemicals Co.	**Egypt**	
	2013	**2012**
Return on Assets	31.51%	25.83%
Receivable Turnover in Days (RTD)	108.67	152.05
Payable Turnover in Days (PTD)	275.33	252.49
Inventory Turnover in Days (ITD)	68.78	78.28
Cash Conversion Cycle (CCC)	-97.87	-22.16
Operating Cycle	177.46	230.33
Debt Ratio	25.79%	22.53%
Sales Growth	39.17%	-7.09%
Firm Size	8.03	7.70
Bahrain - Bahrain Bourse (2 firms)		
26. United Gulf Investment Corporation B.S.C.	**Bahrain**	
	2013	**2012**
Return on Assets	1.08%	10.31%
Receivable Turnover in Days (RTD)	86.36	156.20
Payable Turnover in Days (PTD)	98.24	292.49
Inventory Turnover in Days (ITD)	266.33	86.07
Cash Conversion Cycle (CCC)	254.45	-50.22
Operating Cycle	352.69	242.27
Debt Ratio	43.97%	38.70%
Sales Growth	-9.12%	-8.90%
Firm Size	17.23	17.32
27. Aluminium Bahrain (ALBA) B.S.C.	**Bahrain**	
	2013	**2012**
Return on Assets	6.77%	7.97%

Receivable Turnover in Days (RTD)	41.59	44.73
Payable Turnover in Days (PTD)	55.68	62.34
Inventory Turnover in Days (ITD)	82.56	82.07
Cash Conversion Cycle (CCC)	68.46	64.46
Operating Cycle	124.14	126.80
Debt Ratio	26.29%	31.55%
Sales Growth	0.75%	-15.80%
Firm Size	13.53	13.52

West Europe Sample - 27 Firms		
France - Paris Stock Exchange (4 Firms)		
1. Pernod Ricard SA (PERP.PA)	**France**	
	2013	**2012**
Return on Assets	4.26%	4.04%
Receivable Turnover in Days (RTD)	56.31	58.56
Payable Turnover in Days (PTD)	165.34	111.94
Inventory Turnover in Days (ITD)	507.65	494.69
Cash Conversion Cycle (CCC)	398.63	441.31
Operating Cycle	563.96	553.25
Debt Ratio	60.00%	61.93%
Sales Growth	4.38%	7.48%
Firm Size	9.06	9.01
2. L'Oreal SA (OREP.PA)	**France**	
	2013	**2012**
Return on Assets	9.58%	9.71%
Receivable Turnover in Days (RTD)	51.88	59.84
Payable Turnover in Days (PTD)	184.45	184.35
Inventory Turnover in Days (ITD)	119.31	112.69
Cash Conversion Cycle (CCC)	-13.26	-11.82
Operating Cycle	171.19	172.53
Debt Ratio	26.69%	29.16%
Sales Growth	-1.51%	10.42%
Firm Size	10.00	10.02
3. Total SA (TOTF.PA)	**France**	
	2013	**2012**
Return on Assets	4.70%	6.04%
Receivable Turnover in Days (RTD)	58.66	57.88
Payable Turnover in Days (PTD)	69.36	64.29
Inventory Turnover in Days (ITD)	50.32	51.51
Cash Conversion Cycle (CCC)	39.61	45.10
Operating Cycle	108.98	109.39
Debt Ratio	58.14%	58.43%

Sales Growth	-2.69%	1.18%
Firm Size	12.34	12.36
4. GDF Suez SA (GSZ.PA)	**France**	
	2013	**2012**
Return on Assets	-5.93%	0.76%
Receivable Turnover in Days (RTD)	92.35	100.91
Payable Turnover in Days (PTD)	118.15	133.82
Inventory Turnover in Days (ITD)	35.80	37.58
Cash Conversion Cycle (CCC)	10.00	4.66
Operating Cycle	128.15	138.49
Debt Ratio	69.39%	70.43%
Sales Growth	-6.50%	-1.16%
Firm Size	11.40	11.48
Netherlands - Amsterdam Stock Exchange (3 Firms)		
5. Koninklijke Philips NV (PHG.AS)	**Netherlands**	
	2013	**2012**
Return on Assets	4.40%	-0.12%
Receivable Turnover in Days (RTD)	74.29	72.85
Payable Turnover in Days (PTD)	67.13	72.28
Inventory Turnover in Days (ITD)	86.69	88.18
Cash Conversion Cycle (CCC)	93.85	88.76
Operating Cycle	160.98	161.04
Debt Ratio	57.78%	61.66%
Sales Growth	-0.55%	3.89%
Firm Size	10.06	10.06
6. Heineken NV (HEIN.AS)	**Netherlands**	
	2013	**2012**
Return on Assets	4.09%	8.10%
Receivable Turnover in Days (RTD)	46.13	50.37
Payable Turnover in Days (PTD)	133.77	135.54
Inventory Turnover in Days (ITD)	93.18	100.46
Cash Conversion Cycle (CCC)	5.53	15.29
Operating Cycle	139.31	150.83
Debt Ratio	65.80%	67.39%
Sales Growth	4.46%	6.96%
Firm Size	9.86	9.82
7. Mota Engil Africa NV (MEAFR.AS)	**Netherland**	
	2013	**2012**

Return on Assets	4.64%	3.43%
Receivable Turnover in Days (RTD)	324.89	359.78
Payable Turnover in Days (PTD)	126.56	202.37
Inventory Turnover in Days (ITD)	59.98	51.26
Cash Conversion Cycle (CCC)	258.31	208.68
Operating Cycle	384.86	411.05
Debt Ratio	83.72%	85.62%
Sales Growth	33.10%	23.07%
Firm Size	6.93	6.65
Portugal - Lisbon Stock Exchange (5 Firms)		
8. Semapa Sociedade de Investimento e Gestao SGPS SA	**Portugal**	
	2013	**2012**
Return on Assets	3.43%	2.99%
Receivable Turnover in Days (RTD)	60.60	67.13
Payable Turnover in Days (PTD)	77.26	45.07
Inventory Turnover in Days (ITD)	68.21	76.68
Cash Conversion Cycle (CCC)	51.56	98.74
Operating Cycle	128.81	143.80
Debt Ratio	79.35%	81.18%
Sales Growth	1.94%	9.72%
Firm Size	7.60	7.58
9. Teixeira Duarte SA (TDSA.LS)	**Portugal**	
	2013	**2012**
Return on Assets	23.30%	14.80%
Receivable Turnover in Days (RTD)	125.74	137.32
Payable Turnover in Days (PTD)	107.81	125.48
Inventory Turnover in Days (ITD)	179.62	44.16
Cash Conversion Cycle (CCC)	197.55	56.00
Operating Cycle	305.36	181.48
Debt Ratio	96.23%	89.53%
Sales Growth	13.18%	14.02%
Current Ratio	96.23%	89.53%
10. Portucel SA (PTI.LS)	**Portugal**	
	2013	**2012**
Return on Assets	7.45%	7.75%
Receivable Turnover in Days (RTD)	58.27	59.70
Payable Turnover in Days (PTD)	55.37	54.18

Inventory Turnover in Days (ITD)	68.94	77.14
Cash Conversion Cycle (CCC)	71.85	82.66
Operating Cycle	127.21	136.84
Debt Ratio	47.53%	45.66%
Sales Growth	1.14%	1.42%
Firm Size	7.34	7.33
11. Galp Energia SGPS SA (GALP.LS)	**Portugal**	
	2013	**2012**
Return on Assets	1.38%	2.47%
Receivable Turnover in Days (RTD)	41.10	41.23
Payable Turnover in Days (PTD)	30.60	3.13
Inventory Turnover in Days (ITD)	37.14	42.33
Cash Conversion Cycle (CCC)	47.64	80.42
Operating Cycle	78.24	83.56
Debt Ratio	62.38%	61.17%
Sales Growth	6.01%	9.76%
Firm Size	9.89	9.83
12. EDP Energias de Portugal SA (EDP.LS)	**Portugal**	
	2013	**2012**
Return on Assets	2.39%	2.38%
Receivable Turnover in Days (RTD)	100.55	106.49
Payable Turnover in Days (PTD)	94.85	91.08
Inventory Turnover in Days (ITD)	9.16	12.63
Cash Conversion Cycle (CCC)	14.85	28.04
Operating Cycle	109.70	119.12
Debt Ratio	87.94%	90.69%
Sales Growth	-1.45%	8.06%
Firm Size	9.69	9.70
Germany - Xetra Stock Exchange (1 Firm)		
13. Adidas AG (ADSGn.DE)	**Germany**	
	2013	**2012**
Return on Assets	6.79%	4.51%
Receivable Turnover in Days (RTD)	51.08	46.60
Payable Turnover in Days (PTD)	88.82	84.15
Inventory Turnover in Days (ITD)	130.77	116.63
Cash Conversion Cycle (CCC)	93.03	79.08
Operating Cycle	181.85	163.23

Debt Ratio	52.68%	54.48%
Sales Growth	-2.63%	11.72%
Firm Size	9.58	9.61
Belgium - Brussels Stock Exchange (7 Firms)		
14. Umicore SA (UMI.BR)	**Belgium**	
	2013	**2012**
Return on Assets	5.10%	6.36%
Receivable Turnover in Days (RTD)	27.49	23.83
Payable Turnover in Days (PTD)	29.09	22.83
Inventory Turnover in Days (ITD)	29.83	25.65
Cash Conversion Cycle (CCC)	28.24	26.65
Operating Cycle	57.32	49.48
Debt Ratio	145.29%	152.09%
Sales Growth	-10.43%	-5.36%
Firm Size	9.19	9.44
15. UCB SA (UCB.BR)	**Belgium**	
	2013	**2012**
Return on Assets	2.12%	49.31%
Receivable Turnover in Days (RTD)	104.97	88.67
Payable Turnover in Days (PTD)	411.07	407.68
Inventory Turnover in Days (ITD)	205.44	207.42
Cash Conversion Cycle (CCC)	-100.66	-111.60
Operating Cycle	310.41	296.08
Debt Ratio	54.36%	51.53%
Sales Growth	1.79%	14.71%
Firm Size	8.13	8.15
16. Solvay SA (SOLB.BR)	**Belgium**	
	2013	**2012**
Return on Assets	54.20%	102.74%
Receivable Turnover in Days (RTD)	68.37	78.79
Payable Turnover in Days (PTD)	61.75	70.35
Inventory Turnover in Days (ITD)	59.00	60.73
Cash Conversion Cycle (CCC)	65.62	69.18
Operating Cycle	127.37	139.52
Debt Ratio	61.80%	66.55%
Sales Growth	-8.58%	-9.89%
Firm Size	9.25	9.30
17. Elia System Operator SA (ELI.BR)	**Belgium**	

	2013	2012
Return on Assets	3.16%	2.51%
Receivable Turnover in Days (RTD)	81.75	187.37
Payable Turnover in Days (PTD)	110.53	129.39
Inventory Turnover in Days (ITD)	7.71	8.65
Cash Conversion Cycle (CCC)	-21.07	66.63
Operating Cycle	89.46	196.03
Debt Ratio	60.24%	65.92%
Sales Growth	7.74%	1.40%
Firm Size	7.19	7.11
18. Delhaize Group SA (DELB.BR)	**Belgium**	
	2013	**2012**
Return on Assets	1.54%	0.87%
Receivable Turnover in Days (RTD)	10.76	11.35
Payable Turnover in Days (PTD)	45.56	43.81
Inventory Turnover in Days (ITD)	30.86	31.95
Cash Conversion Cycle (CCC)	-3.95	-0.50
Operating Cycle	41.61	43.30
Debt Ratio	56.28%	56.48%
Sales Growth	0.56%	7.54%
Firm Size	9.96	9.95
19. D'Ieteren SA (IETB.BR)	**Belgium**	
	2013	**2012**
Return on Assets	3.21%	5.44%
Receivable Turnover in Days (RTD)	26.28	26.67
Payable Turnover in Days (PTD)	18.72	18.62
Inventory Turnover in Days (ITD)	51.85	53.08
Cash Conversion Cycle (CCC)	59.41	61.14
Operating Cycle	78.13	79.75
Debt Ratio	51.51%	51.98%
Sales Growth	-0.80%	-7.74%
Firm Size	8.61	8.62
20. Bekaert NV (BEKB.BR)	**Belgium**	
	2013	**2012**
Return on Assets	0.73%	-5.37%
Receivable Turnover in Days (RTD)	76.42	71.03
Payable Turnover in Days (PTD)	46.24	39.53
Inventory Turnover in Days (ITD)	72.82	69.49

Cash Conversion Cycle (CCC)	103.00	100.99
Operating Cycle	149.24	140.51
Debt Ratio	60.17%	61.23%
Sales Growth	-7.95%	3.61%
Firm Size	8.07	8.15
UK - London Stock Exchange (7 Firms)		
21. 7 Digital Group plc (7DIG.L)	**UK**	
	2013	**2012**
Return on Assets	-20.00%	-53.73%
Receivable Turnover in Days (RTD)	96.05	125.47
Payable Turnover in Days (PTD)	22.81	42.12
Inventory Turnover in Days (ITD)	11.41	13.52
Cash Conversion Cycle (CCC)	84.65	96.87
Operating Cycle	107.46	138.99
Debt Ratio	20.00%	20.90%
Sales Growth	18.75%	-28.89%
Firm Size	1.34	1.16
22. London Security PLC (LSC.L)	**UK**	
	2013	**2012**
Return on Assets	11.23%	17.29%
Receivable Turnover in Days (RTD)	72.71	68.27
Payable Turnover in Days (PTD)	54.28	55.71
Inventory Turnover in Days (ITD)	162.22	182.50
Cash Conversion Cycle (CCC)	180.65	195.06
Operating Cycle	234.93	250.77
Debt Ratio	32.13%	29.94%
Sales Growth	7.76%	-2.28%
Firm Size	4.62	4.54
23. Ab Dynamics PLC (ABDP.L)	**UK**	
	2013	**2012**
Return on Assets	12.07%	20.00%
Receivable Turnover in Days (RTD)	38.89	61.52
Payable Turnover in Days (PTD)	32.44	30.85
Inventory Turnover in Days (ITD)	60.83	85.55
Cash Conversion Cycle (CCC)	67.28	116.22
Operating Cycle	99.73	147.06
Debt Ratio	29.31%	32.86%

Sales Growth	37.08%	36.92%
Firm Size	2.50	2.19
24. Abcam PLC (ABCA.L)	**UK**	
	2013	**2012**
Return on Assets	16.36%	14.45%
Receivable Turnover in Days (RTD)	48.09	47.40
Payable Turnover in Days (PTD)	49.49	42.76
Inventory Turnover in Days (ITD)	157.31	185.51
Cash Conversion Cycle (CCC)	155.91	190.15
Operating Cycle	205.40	232.91
Debt Ratio	14.81%	15.64%
Sales Growth	24.95%	17.41%
Firm Size	4.81	4.58
25. Marks & Spencer Group PLC (MKS.L)	**UK**	
	2013	**2012**
Return on Assets	5.97%	7.05%
Receivable Turnover in Days (RTD)	5.13	5.14
Payable Turnover in Days (PTD)	55.39	55.81
Inventory Turnover in Days (ITD)	44.25	39.63
Cash Conversion Cycle (CCC)	-6.01	-11.04
Operating Cycle	49.38	44.78
Debt Ratio	66.89%	61.80%
Sales Growth	0.94%	1.99%
Firm Size	16.12	16.11
26. Amara Mining PLC (AMARA.L)	**UK**	
	2013	**2012**
Return on Assets	-26.66%	-0.20%
Receivable Turnover in Days (RTD)	37.61	20.79
Payable Turnover in Days (PTD)	149.53	13.56
Inventory Turnover in Days (ITD)	159.40	115.26
Cash Conversion Cycle (CCC)	47.49	122.49
Operating Cycle	197.02	136.05
Debt Ratio	32.14%	22.84%
Sales Growth	-42.61%	-24.98%
Firm Size	3.96	4.51
27. ZincOx Resources PLC (ZOX.L)	**UK**	
	2013	**2012**
Return on Assets	-16.19%	-5.41%

Receivable Turnover in Days (RTD)	42.47	165.60
Payable Turnover in Days (PTD)	70.79	127.99
Inventory Turnover in Days (ITD)	12.68	33.64
Cash Conversion Cycle (CCC)	-15.64	71.26
Operating Cycle	55.15	199.24
Debt Ratio	48.71%	41.25%
Sales Growth	154.63%	300.00%
Firm Size	3.31	2.38