T.C.
SAKARYA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES

THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT AND CORPORATE PERFORMANCE: EVIDENCE FROM TURKEY

MASTER THESIS

Mohamed Mohamud MAKARAN

Department : Business Administration
Field of Science: Accounting and Finance

Supervisor of Thesis: Assist. Prof. Dr. Ahmet Selçuk DİZKIRICI

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This thesis approved by consensus of the examining committee on May 28th 2015.

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DECLARATION

"This thesis is my original work and has not been presented for a degree or any other academic award in any university or institution of Learning".

Mohamed Mohamud MAKARAN

28.05.2015

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Mohamed Mohamud MAKARAN

28.05.2015

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LIST OF ABBREVIATIONS

CR : Current Ratio

CCC : Cash Conversion Cycle

DR : Debt Ratio

FS : Firm Size

ICP : Inventory Conversion Period

ISE : Istanbul Stock Exchange

KAP : Kamuyu Aydınlatma Platformu

PDP : Payable Deferral Period

RCP : Receivable Collection Period

ROA : Return on Assets

SG : Sales Growth

SMEs : Small and Medium-Sized Enterprises

TL : Turkish Lira

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Tezin Yazarı: Mohamed Mohamud MAKARAN	**Danışman:** Yrd. Doç. Dr. Ahmet Selçuk DİZKIRICI
Kabul Tarihi: 28 Mayıs 2015	**Sayfa Sayısı:** x (ön kısım) +68 (tez) + 1 (ek)
Anabilim Dalı: İşletme	**Bilim Dalı:** Muhasebe ve Finansman

Firmaların kısa dönemdeki yatırımlarını ifade eden çalışma sermayesinin toplam aktifler içerisindeki payı ve firma kârlılığı üzerindeki etkisi önemli boyutlardadır. Çalışma sermayesinin yönetimi firmanın başarı veya başarısızlığı için hayati önem taşımaktadır. Çünkü fazla ya da yetersiz çalışma sermayesi düzeyleri herhangi bir işletme için olumsuz sonuçlar doğurabilmektedir. Yetersiz çalışma sermayesi karlılıkta azalmaya neden olabilir ve hatta faaliyetlerin sürdürülebilmesinde başarısızlığa yol açar. Ayrıca fazla çalışma sermayesi firmanın karlılığını azaltabilir ve atıl durumda kalmaması gereken çalışma sermayesi düzeyi işletmelerin düzgün çalışmasını sağlamak için çok hayati önem taşımaktadır.

Literatürde karlılık ve çalışma sermayesi yönetimi arasındaki ilişki hakkında farklı ülkeler üzerine yapılmış çeşitli çalışmalar vardır. Ayrıca Türkiye'de de çalışma sermayesi yönetimi konusunda çeşitli çalışmalar yapılmıştır ancak ticaret firmalarının kurumsal performansı üzerindeki etkisine gerekli önem verilmiş değildir. Bu nedenle çalışmada, çalışma sermayesi yönetimi bileşenleri ile firmaların karlılıkları arasındaki ilişki Borsa İstanbul Ticaret Endeksi'nde faaliyet gösteren seçilmiş işletmelerden alınan ikincil veriler kullanılarak regresyon analizi ile araştırılmaktadır.

Bu çalışmada, firmanın performansını artırmak için firma yoneticilerinin çalışma sermayesi yönetiminin nasıl verimli kullanılacağı konusunda bilgilendirilmesi amaçlanmıştır. Alacak tahsil süresi, stok dönüşüm süresi, borç ödeme süresi, nakit dönüşüm süresi, cari oran, kaldıraç oranı, firma büyüklüğü ve satışlardaki büyüme; çalışma sermayesi ile toplam varlık kârlılığı (ticaret firmalarının performanslarını değerlendirmek amacıyla) arasındaki ilişkiyi değerlendirmek için kullanılmıştır.

İşletme sermayesinin doğru yönetimi, firmalarda düzgün yürütülmesini sağlamak, yükümlülüklerini karşılamak ve günlük operasyon için gün içinde gerekli likiditeyi korumaya dikkat etmek önemlidir.

Bu araştırmada 2010-2014 yılları için Türkiye'deki 11 ticaret firması örneklem alınarak işletme sermayesi yönetimi ve firmanın karlılığı (Performans) arasındaki ilişki incelenmiştir. Çalışma aşağıdaki konuları dikkate alarak önceki çalışmalara yeni bir bakış açısı sunmayı ve eksiklikleri tamamlamayı amaçlamaktadır:

1. Özellikle Türkiye'deki ticaret firmalarını inceleyen ve çalışma sermayesi yönetimi üzerine yapılmış olan önceki çalışmaların bir uzantısıdır.
2. Türkiye'de 2010 yılından 2014 yılına kadarki dönemde çalışmalar yetersiz sayıdadır. Bu sınırlı sayıdaki çalışmalara örnek verecek olursak; Şamiloğlu ve Demirgüneş (2008) 1998-2007 döneminde için firma karlılığı üzerindeki işletme sermayesi yönetiminin etkisini araştırmışlardır.

Uyar'da (2009) 2007 dönemi için Türkiye'de ampirik araştırma yaparak firma büyüklüğü ve karlılık ile nakit dönüş süresinin ilişkisini analiz etmiştir. Şen ve Oruç (2009) 1993-2007 dönemi için İMKB'de toplam varlıklar üzerindeki etkinliği, çalışma sermayesi yönetimi düzeyi ve getiri arasındaki ilişkiyi incelemişlerdir. Bununla birlikte, yukarıda bahsedilen dönemde tüm araştırmacılar Türkiye'de kriz sonrası dönemi dikkate almamışlardır.

Araştırma hedefleri şunlardır:

1. Türk ticaret firmalarının alacak tahsil süresi ve karlılıkları arasındaki ilişkinin belirlenmesi,
2. Türk ticaret firmalarının stok dönüş süresi ve karlılıkları arasındaki ilişkinin açıklanması,
3. Türk ticaret firmalarının ödenecek erteleme süresi ve karlılıkları arasındaki ilişkinin incelenmesi,
4. Türk ticaret firmalarının nakit dönüş süresi ve karlılıkları arasındaki ilişkinin açıklanması,
5. Çalışma sermayesi yönetiminin şirketlerin performansına, etkisi, çalışma bileşenleri kapsamında incelenmesi.

Bu araştırma Borsa İstanbul'de işlem gören 11 Türk ticaret şirketinin çalışma sermayesi ve kurumsal performans yönetimi arasındaki ilişkiyi belirlemek amacıyla, 2010 - 2014 arasındaki beş yıla ait 55 gözlem panel veri haliyle, korelasyon ve regresyon yöntemleri kullanılmıştır.

Sonuç olarak; toplam varlık kârlılığının işletme sermayesi bileşenleri ile önemli ve güçlü ilişkilere sahip olmadığı görülmektedir. Ayrıca; borç ödeme süresi ve toplam varlık kârlılığı arasında pozitif bir korelasyon varken toplam varlık kârlılığı ve alacak tahsil süresi, stok dönüşüm süresi, nakit dönüşüm süresi arasındaki ilişkiler negatif ilişkilidir.

Bu çalışmanın sonucu tüm modellerin makul olduğunu gösterir, ancak ilk model yani alacak tahsil süresi ve karlılık arasındaki ilişki daha önemli ve diğer dört model arasında daha uygun olduğu değerlendirilmektedir.

Kurumsal kârlılık ve nakit dönüşüm süresi arasındaki negatif ilişki, daha önceki araştırmalara benzer ve oldukça tutarlıdır. Bu nedenle; işletme yöneticileri ve sahipleri için karlılıkta artışa yol açar. Nakit dönüşüm süresini azaltmak bu çalışmayla, değer yaratmak için önerilmektedir. Karlılığı artırmak için en iyi yol, etkin bir çalışma sermayesi yönetiminin kullanılmasıdır.

Aynı zamanda Türkiye'deki ticaret firmalarının alacak tahsil süresinin de uzun bir döngü olduğu fark edilmiştir. Bu sebeple, kredi yöneticisinin ellerinden geldiğince imkan dahilinde alacak tahsil süresini kısaltılması gerekir.

Stok devir hızını artırmak, bir firmanın karlılığını artırmak mümkündür. Bu yapıldığında, ticaret firmalarının finans yöneticileri stok dönüşüm dönemini düşürülebilmektedir.

Bu araştırmayı sürdürerek ticaret şirketleri dışında örneklem genişletilebilir. Çalışma; nakit, menkul kıymet, firma performansı ve firma değeri dahil her işletme sermayesi bileşeni arasında ayrıntılı bir ilişkiye odaklanılarak genişletilebilir. Bu ticaret firması çalışmasında, özellikle stok dönüşüm süresi ve borç ödeme süresi üzerinde durulmuştur. Araştırma kapsamı daha fazla sayıdaki küçük ve orta ölçekli işletmelere de genişletilebilir.

Anahtar kelimler: Çalışma Sermayesi Yönetimi, Kârlılık, Ticaret Firmaları, Borsa İstanbul, Kurumsal Performans.

Sakarya University Institute of Social Sciences Abstract of Master's Thesis

Title of the Thesis: The Relationship Between Working Capital Management And Corporate Performance: Evidence From Turkey	
Author: Mohamed Mohamud MAKARAN	**Supervisor**: Assist. Prof. Ahmet Selçuk DİZKIRICI
Date: May 28th , 2015	**No. of Pages:** x (Pre text) + 68 (thesis) +1 (appendix)
Department: Business Administration	**Field of Science:** Accounting and Finance

"Working capital" means the short term investment of a firm and represents the main share of items on a firm's balance sheet hence its impact on the firm's profitability is quite important. Working capital management is vital for the firm's success or failure because excessive and insufficient working capital levels are negative for any business enterprise. Insufficient working capital may cause a decrease in profitability moreover it leads to failure in sustaining the activities. Additionally excessive working capital creates idle cash which can reduce the profitability of the firm that adequate working capital is very vital to maintain smooth running of any company.

Several studies about the relationship between profitability and working capital management from various countries exist in the literature also various studies about working capital management from Turkey have been done but its effect on corporate performance of trading firms has not been given due attention. Hence; this study, which is based on secondary data acquired from Istanbul Stock Exchange Trade Index, is finalized with an attempt to investigate the relationship between working capital management components and profitability of the firms by using regression analysis.

In this study; it is aimed to highlight firm managers on how to use efficient working capital management to enhance the firm performance. Receivable collection period, inventory conversion period, payable deferral period, cash conversion cycle, current ratio, debt ratio, firm size and sales growth are used to evaluate the relationship between working capital, and return on assets to assess the performances of the trading firms.

Keywords: Working Capital Management, Profitability, Trading Firms, Istanbul Stock Exchange, Corporate Performance.

INTRODUCTION

Working capital management plays a vital role in a firm's success or failure because excessive or insufficient working capital levels may cause negative impact and influence on the firm's performance. Working capital management is thus significant and due to its relation with current assets and current liabilities, it is of great important in research studies.

Since the 1900's, financial management has been considered as one of the subcategories of management. Gradually it has become important and more evident because a lot of decision-making are based on the information collected in this field. Today, proper management of resources and expenditure can be regarded as good financial management because they have impact on the shareholder's value. Financial management is further classified into more subcategories in which the role of working capital management is exceedingly significant. Working capital management of firm has been recognized as a crucial area in financial management.

Working capital is frequently classified as gross and net working capital. Gross working capital is defined as firm's total investment in current assets such as cash and marketable security, accounts receivables and inventories. These short term assets are changed into cash during the calendar year. Further; net working capital is suggested to be the difference of current assets from current liabilities. Working capital, on the other hand, is generally referred as "net working capital" by accountants.

Accordingly researchers have defined working capital management as an administration of the business's current assets and the financing needed to support current assets. Because working capital management is the management of firm's current assets and liabilities; it has been stated that working capital management is the regulation, adjustment, and management of balance between current assets and current liabilities of a firm in such a way that maturing obligations are met, and the fixed assets are properly serviced. It further pointed out that, proper working capital management must guarantee an adequate relation between the different components of an organization's working capital so as to make an efficient mix, which guarantees capital adequacy.

An efficient management of working capital is expected to enable a business to continue its operations without interruption while having enough cash to pay its short term liabilities. Moreover, working capital management has to make it possible for the business to satisfy upcoming operational expenses. Many businesses today have found themselves in difficult situations with creditors mainly because management of a firm does not constantly monitor and manage a business's liquidity which is the amount of working capital.

One of the most well-known measurements of managing working capital is a cash conversion cycle. This refers to the length of time between a firm's outlay for buying of raw materials and the collection of money from the sale of good, when the cycle is longer, it shows the existence of a bigger investment in component of working capital and hence leads to need for finance. As a result, interest expenses will be the higher which causes to higher default risk and lesser profitability. Profitability is utilized as an indicator of a firm's performance and there is a negative relationship between cash conversion cycle and firm's profitability (performance). Furthermore, investors always take performance evaluation of the firm into account for the purpose of identifying the desirable investment opportunities. Shareholders' wealth depends on satisfactory performance of the firm, thus an increase in the firm's value motivates shareholders to continue on investing their funds in a specific operation.

The goal of the firm is to reduce its cash conversion cycle without damaging business operation. In this regard the previous researches have mentioned that conversion cycle can be shortened first by reducing the inventory conversion period by processing and selling goods more speedily and then reducing receivables collection period by speeding up collection finally lengthening the payable deferral period by slowing down the firm's own payments.

There are two methods that can be used in evaluating firm's performance, namely qualitative and quantitative method. The 'return on assets'(ROA), 'return on equity' (ROE), 'return on sales'(ROS), Gross profits etc, are very well known quantitative measurement parameters in accounting and finance, and have been generally used to evaluate company's performance, because they give a true picture of how well a company can manage and use its financial statement. Weak financial management

especially poor working capital management and insufficient long term financing are the two major primary causes of failure business as seen from studies in the UK and US. This study focuses on determining how working capital components are associated with the firm's performance by considering a sample of trading companies in Turkey.

Problem Statement

Benefits gained from a proper working capital management have made it a more popular issue in any organization. Working capital management is suggested to be crucial to research studies relating to the merchandising and manufacturing companies.

In order to succeed in their business activities, financial managers usually discuss the problems related to the effective and efficiently management of working capital. It is therefore important to note that proper management of working capital maintains the required liquidity in day-to-day operation to ensure firms smooth running and meet its obligation.

This research examines the relationship between the working capital management and firm's profitability (performance) by considering a sample 11 trading firms in Turkey for the period of 2010-2014. It is aimed at filling the gap and presenting a new perspective to the previous studies by taking the following issues into account.

1. It is an extension to previous studies on working capital management which in particular examines trading firms in Turkey.
2. During the period from 2010 until 2014, there were insufficient numbers of studies on working capital management in Turkey. For instance, Şamiloğlu and Demirgüneş (2008) investigate the effect of working capital management on firm profitability for period 1998-2007. Uyar (2009) also analyzed the relationship of cash conversion cycle with firm size and profitability which was an empirical investigation in Turkey for period 2007. Şen and Oruç (2009) examined relationship between efficiency level of working capital management and return on total assets in ISE for period (1993-2007).
3. There are several studies conducted in different countries which examine the relation between working capital management and firm profitability. However, the impact of working capital management on corporate performance for trading

companies listed on Istanbul Stock Exchange Trade Index (BIST XTCRT) in Turkey has been neglected.

Research Questions

1. What is the relationship between receivable collection period and Turkish trading firms' profitability?
2. What is the relationship between inventory conversion period and Turkish trading firms' profitability?
3. What is the relationship between payable deferral period and Turkish trading firms' profitability?
4. What is the relationship between cash conversion cycle and Turkish trading firms' profitability?

Research Objectives

This study is aimed at finding out the relationship between working capital management and profitability of the firms in ISE with a special reference to the wholesaler and retailer companies due to need for further studies related to this topic in Turkey. The followings are specific research objectives:

1. Examine the relationship between cash conversion cycle and Turkish trading firms' profitability,
2. Determine the relationship between receivable collection period and Turkish trading firms' profitability,
3. Describe the relationship between inventory conversion period and Turkish trading firms' profitability,
4. Investigate the relationship between payable deferral period and Turkish trading firms' profitability,
5. Examine the extent in which the components of working capital management effect on performance of the companies.

Significance of the Study

The results of this study give guidance to firm managers of wholesalers and retailer companies on how to use efficiently manage working capital in order to enhance the

firm's performance. Furthermore, the research recommends the best way to working capital management that aids a firm to become financial stable, increase profitability, and have a proper working capital management by avoiding financial crisis and bankruptcy.

The outcomes of this research could also be used by the academicians and students in accounting and finance that are interesting in carrying out further studies in this field. In addition to this financial experts could also analyze it so as to gain further the knowledge related to the topic.

Scope of the Study

The study is concerned with investigating the relationship between working capital management and corporate performance of trading firms in Turkey listed on Istanbul Stock Exchange. The total sample size of the study is 11 trading companies. Furthermore, the study considers only 5 years data from year 2010 to 2014. Data used in the study is mainly secondary data and is taken from the companies listed on Istanbul Stock Exchange. It also used panel data which consisted of cross-sections and time series.

Organization of the Thesis

As a remainder; this research is organized into three chapters. The first chapter explains the concept and management of working capital. The second chapter examines the relationship between working capital and firm's performance. Conceptual framework, Literature review, research design, operational definition, hypotheses development, data collection procedure, sampling design, specification of models, and data analysis technique, are discussed in the third chapter.

PART 1: WORKING CAPITAL: CONCEPT AND MANAGEMENT

The general overview associated with working capital and working capital management is presented. Particularly the concept and meaning relevant to working capital management and its components are discussed in this part. This section also highlights the importance of working capital and how the proper management of working capital can increase the profitability in a firm; the impact of inflation on working capital and lastly the types, cycle, policies and objective of working capital management are discussed.

1.1. Concept and Meaning

Working capital is a well known and frequently mentioned issue in the finance literature, hence; it has been defined several times in various ways. For example; working capital is the firm's short term, current assets or current liabilities, networking working capital suggests the excess of current assets over current liabilities according to Brealey et al (2011: 757). Due to this explanation; working capital can be regarded as the fund that operates the business thus it plays a key role in a business enterprise just as the role of heart in human body. Hence it implies the firm's ability to meet its short term financial obligations.

A percentage of a company's total financial resources can be expressed as its working capital put to a variable operative purpose (Brigham and Gapenski, 1996). Accordingly Paramasivan and Subramanian (2009: 150) also explains working capital as circulating capital, that is to say current assets of a company that change in the ordinary course of business from one form to another for example cash to inventories, inventories to receivables and receivables to cash.

Brigham and Houston (2003: 689) define working capital as the current assets used in operations and they make another explanation (2003: 690) in the following paragraph:

> **The term working capital originated with the old Yankee peddler, who would load up his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or turned over, to produce the profits. The wagon and horse were the fixed assets. The peddler generally owned the horse and wagon so, they**

financed with equity capital. But, he borrowed the funds to buy the merchandise. These borrowing were called working capital loan, they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then the bank would make another loan, and banks that followed this procedure were said to be employing sound banking practices.

The concept of working capital was first introduced by Marx (1867) using the terms "variable capital" and "constant capital". He defined variable capital as the expenditure for payrolls advanced to workers before the goods they worked on were complete while constant capital as an outlay for raw materials and other instruments of production made by labor (Bhattacharya, 2009: 2)

Guthman and Dougall (1948) define working capital as excess of current assets over current liabilities. Gladson (1951) elaborated this view by stating that working capital is the excess of current assets of business (cash, account receivables, inventories, etc.) over current items owed to employees and others such as salaries and wages, accounts payables, taxes (Bhattacharya, 2009: 2).

Working capital can be understood as the whole current assets owned by a firm. What remains after extracting short term liabilities from current assets is called Net working capital (Şen and Oruç, 2009: 109).

The working capital concept is suggested to be useful to groups interested in determining the amount and nature of assets that may be used to pay current liabilities (Walker, 1964) who are mostly composed of creditors, particularly the supply creditors who may be concerned to know the "margin of safety" available to them when the realization of current assets has been delayed for some reasons.

1.2. Working Capital Management

Multiple studies have been done on concept and management of working capital from different perspectives, in different situations and environments. Because working capital can be suggested as the resources of the firm that are used to conduct operations to do the day-to-day "work" that makes the business successful, without working capital, a business will not be able to pay short term obligations.

Management of working capital is considered in this context to provide the concordance of current assets and liabilities as the working capital in real fact is the net current assets. Therefore; working capital management of a business is suggested to be the administration of current assets and current liabilities.

Smith (1980) explains that working capital management is concerned with the problems that arise in attempting to manage the current assets, current liabilities and the interrelationship between them. Weston and Brigham (1987: 343-344) define working capital as a firm's investment in short term assets e.g. cash marketable securities, inventory and accounts receivable; working capital management refers to all aspects of the administration of both current assets and current liabilities. According to Eljelly (2004: 48-61); on one hand planning and controlling current assets and current liabilities in a way that eliminates the risk of the inability to meet short term obligations while avoiding excessive investment in these assets on the other is efficient working capital management.

1.3. Components of Working Capital Management

Since the concept of working capital is suggested to be crucial for business enterprises' day to day operations; the components of working capital management such as cash, accounts receivable and payable besides inventories are taken into consideration that each of the working capital components has an impact on the others. Therefore; working capital management should be integrated into the short term financial decision making process in order to maximize the performance of a business (Crum et al, 1983).

1.3.1. Cash Management

Cash is the most liquid of assets including demand deposits, money market accounts and currency holdings. Companies need cash to deal with their activities; it is like the oxygen for a company to survive. Abel (2008) states that cash is crucial in every business in term of enhancing its survival and prosperity that it is one of the most important components of the current assets to operate the business.

Gitman (2009) indicates that cash management involves planning for cash inflows and outflows. Besides determining the optimal balances of cash and near-cash accounts such as marketable securities; cash management is supposed to have a major effect on overall

working capital management, so it plays a key role in any organization given its size and description.

There are various motives for a company to be mentioned to hold cash according to Keynes (1973) as shown below:

- First; it is pointed out that firms hold cash in order to bridge the interval between the receipt of income and its disbursement. In other words, companies hold a certain amount of cash in order to meet the regular expense of their daily operations; thus, the higher the firm's ability to schedule its cash flows (depending on their predictability) the weaker the 'transactions-motive' for holding cash will be.

- Secondly firms hold cash as a precautionary motive which pays regard to a company's needs to provide for unsuspected expenses and unforeseen opportunities of advantageous purchases.

- Holding of cash for the purpose of speculation is the third motive. The basis of this is the assumption that as interest rates increase, they induce a decrease in prices of securities and vice versa. Hence at such times when the interest rates are expected to fall, a firm will invest its idle cash in securities. This makes the acquired securities rise as a consequence and as thus the firm will benefit from the falling interest rates.

1.3.2. Marketable Securities Management

Weston and Copeland (1989: 289) explain marketable securities as a portfolio of quickly liquid, near-cash assets which serve as a backup to the cash. There are several types of marketable securities such as treasury securities, repurchase agreements, agency securities or commercial papers; furthermore, marketable securities with a maturity of less than three months are referred to as cash equivalents on the balance sheet, and those with a longer maturity as short term investments (Van Horne, 1995: 388).

1.3.3. Account Receivables Management

A debt owed by customers as a result of a sale of goods or services in the ordinary course of business is called a receivable and it is one of the major components of the

current assets of the business concerns. When customers buy on credit sales, it is known as Bills Receivables (Paramasivan and Subramanian, 2009: 179).

Receivables management deals with the firm's decision on whether to approve credits to customers. A monitoring system is important to control the receivables to prevent it being in an excessive level because then cash flows will decline, and bad debts will offset the profits on sales. When the situation is getting out of hand, corrective action becomes mandatory, thus a good receivables control system must be put in place (Brigham and Houston, 2003: 710).

According to Kelly and McGowen (2010), later payments or non payment at all by customers aggravate the problem therefore establishing a good policy for controlling credit offers with associated costs is important for the financial manager or credit manager, Furthermore; Kelly and McGowen (2010) create the notion of credit policy offered to the credit customers as shown below:

- Setting Credit Terms: This section of the credit policy is concerned with both how long the business should extend credit and what type of discount it has to offer so as to convince customers for an early payment.
- Establishing Credit Standards: These standards deal with how the business should decide which customers qualify for credit, the type of credit data required, and how strict should standards be.
- Designing Appropriate Collection Policy: This part is concerned with how aggressive the business should be at collecting overdue accounts and at what point of time it makes sense to take legal action against credit customers who are having late paying accounts, or to turn over the outstanding accounts to collection agencies. It also deals with when it makes sense to work out compromises.

The Receivables Collection Period is the second component of the cash conversion cycle, so, it refers to the average length of time required to convert the firm's receivables into cash, that is to collect cash following a sale, hence it is also called the days sales outstanding (DSO) and is calculated by dividing accounts receivable by the average credit sales per day (Brigham and Houston, 2003: 691-692).

1.3.4. Inventory Management

Inventory is another significant component of current assets; furthermore, it is the stock of physical goods for eventual sale. Deloof (2003: 573-587) argues that inventory management as a trade-off between sales and costs; so when a business keeps more stocks it can result in more sales on one hand, but also keeping more stocks lead to higher costs (Baveld, 2012: 9).

Raw materials, work in progress and finished goods are the three major components of an inventory Joshi (2000). Further he defines raw materials as basic input which is yet to be processed into final product. Work-in-process represents all items which are at various stages of production processes. These items have ceased to be raw material but have not developed into final products and are at various stages of semi-finished levels. Finished goods inventory covers the final products which are waiting for sale.

There are two things related to good inventory management practice; quantity to be ordered and time of order. These are critical issues to be considered rightly in order to have proper control of inventory. Ross et al (2003: 727) suggest the economic order quantity model as one of the approaches to determine the optimal inventory level taking the inventory carrying costs, inventory shortage costs and total costs into account. The business should also consider time ordered inventory that facilitate customers to get their goods on time enhancing its satisfaction due to their strategies because the objective of inventory management is to turn over inventory as quickly as possible without losing sales from stock-outs.

The inventory conversion period (ICP) to be mentioned in the inventory management issue is the first component of cash conversion cycle and it is the average time required to convert materials into finished goods and then to sell those goods. It is calculated by the following equation as; ICP = Inventory / (Cost of goods sold/365) (Brigham and Houston, 2003: 691). A firm's performance can be greatly impacted on by the inventory conversion period Deloof (2003: 573-587). For a shorter inventory conversion period, stock out costs of inventory could increase which results in losing sales opportunities and leads to poor performance.

A concept that is often used by firms for inventory management to consider here is just-in-time (JIT) approach. Gitman (2009: 650) suggests that just-in-time system is used to minimize inventory investment; therefore, the philosophy is that materials are only purchased when they are needed for production, further, the goal of this system is manufacturing efficiency because it uses inventory as a tool for attaining efficiency by emphasizing quality of the material used and their timely delivery. The objective of the JIT system is; to eliminate inventory storage cost, to eliminate raw material wastage due to obsolescence, theft and pilferage and finally to eliminate other inventory handling costs (Kimeli, 2012: 8).

Just-in-time inventory management also can reduce costs by allowing suppliers to produce and transport goods on a steadier schedule. So that; just-in-time systems rely heavily on predictability of the production process (Brealey et al, 2001: 214).

1.3.5. Account Payable Management

Accounts payable refer to the debt arising from sales and it is recorded as an account receivable by the seller and as an account payable by buyer (Mekonnen, 2011: 27). Therefore; businesses can make purchases from other businesses on credit, recorded as an account payable and it is the largest single category of short term debt, representing about 40 % of the current liabilities of the average nonfinancial corporation (Brigham and Houston, 2003).

Gitman (2009: 682) mentions that the objective of accounts payable management is to pay creditors as slowly as possible without damaging its credit rating. In addition to this, Accounts payables and accruals are the two major spontaneous liability sources of short term financing for a typical firm, and also accounts payables are specified as the major unsecured short term financing for businesses (Finau, 2011: 14). The efficiency of firm in meeting its accounts payable can be analyzed by average payment period (APP) of the firm. APP is the final component of the cash conversion cycle (CCC), which is the average length of time between the purchase of material and labor and the payment of cash for them (Brigham and Houston, 2003: 692).

1.4. Importance of Working Capital Management

Working capital management is mentioned to be vital for business enterprises. Explanations about why working capital management is significant for a firm generally focus on the relationship between efficiency and firm profitability (Afza and Nazir, 2007: 25-36; Deloof, 2003: 573-587). Efficient working capital management involves planning and controlling of current liabilities and assets in a way that avoids excessive investments in current assets and prevents working with few current assets insufficient to fulfill the responsibilities (Eljelly, 2004: 48-61). Mohammed (2011: 15) explains the importance of working capital management as it is shown in the following paragraph:

> **The success of operations of a firm is determined to a large extent by the method used by its current administration. It requires continuous management to maintain proper level in various components of working capital i.e. cash, receivables and inventory etc. in establishing proper proportions, cash and financial budget may be very useful. Sales expansion, dividend declaration, plant expansion, new product line, increased salaries and wages, rising price levels etc. put added strain on working capital management. Due to the poor management and lack of management skills, business fails certainly. Shortage of working capital, so often advanced as the main cause of failure of industrial concerns, is nothing put the clearest evidence of mismanagement which is so common.**

Liquidity and profitability were first signaled by Smith (1980) as importance of the tradeoffs between the dual goals of working capital management. Reducing the level of investment in current assets, while still being able to support sales, would cause the firm an increase in return on total assets; hence, 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 (Mohammed, 2011: 15).

1.5. Impact of Inflation on Working Capital

Inflation is defined by Damodaran (2001: 319) as the change in purchasing power in a currency from one period to another relative to some basket of goods and services. Bora (2013) also suggests that inflation is the rate at which the general level of price for

goods and services is rising and subsequently purchasing power is falling. Therefore, working capital is the resources of the firms that are used to conduct operations. During the inflationary periods; a firm needs more funds to finance its current assets but due to the increase in interest rates; the cost of financing working capital rises. Mill (1996) observes that the capital budgeting process is not neutral with respect to inflation, even if output prices rise at the same rate as costs; of critical importance is the degree of net working capital as a proportion of the overall financing required, the higher the net working capital the greater being the impact of inflation on capital spending.

In an inflationary environment, the cost of producing each unit increases over time; thus, by the time the company has collected the cash from its previous sales, the production costs on subsequent units have increased (Harrington, 1993: 106). So that; when the production costs increase, products will become more expensive to produce and the customer will not able to buy the goods. When interest rates are high and financing requirement becomes large, buyers may delay their payment beyond the normal credit period; these in turn cause the selling firm's investment in account receivables to rise, increasing their financing requirement (Pieterson, 2012: 24).

Samuel (2011) states that inflation leads to the rise in the average price of all goods and not just one item; it is compulsory that the managers focus on the cost of inflation when budgeting to ensure rapid cash flow within the working capital cycle. Capital budgeting results would be unrealistic if the effects of inflation are not correctly factored in its analysis (Khan and Jain, 2004).

1.6. Types of Working Capital

Approaches according to accountants and managers have various meanings on working capital. Besides; most of the companies, due to their activities, have seasonal fluctuations in sales. Hence, types of working capital as gross, net, permanent, temporary, seasonal, and special working capital are mentioned below.

1.6.1. Gross Working Capital

Gross working capital is defined as the total amount a company's current assets, including inventory, accounts receivables, marketable securities, and other assets that can be easily converted into cash within one year; commonly, gross working capital is also known as the total current assets of a firm (Paramasivan and Subramanian, 2009: 151).

1.6.2. Net Working Capital

Net working capital is a measure of a firm's ability to meet its short term obligations and it helps a company to know its cash available for business operating expenses. According to Mekonnen (2011: 14). Net working capital is the amount of assets that remain after subtracting the firm's current liabilities, i.e. the claims of outsiders which are expected to mature for payment within the calendar year and include creditors for goods, bills payable, bank overdraft and accrued expenses from its total current assets.

1.6.3. Permanent Working Capital

Permanent working capital is defined as a minimum amount of investment in all working capital that is required at all times to carry out minimum level of business activities and it is also simply called as fixed working capital (Brigham and Houston, 2003). Further to this; permanent working capital refers to the current assets needed on a continuing basis over the entire year. As it is shown in the Figure 1; the level of permanent working capital does not change in time.

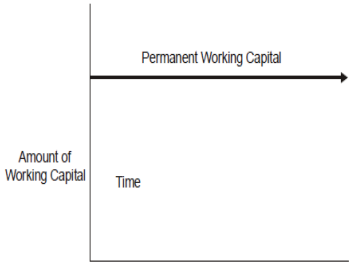

Figure 1: Permanent Working Capital

Source: Paramasivan and Subramanian (2009: 153)

1.6.4. Temporary Working Capital

Temporary working capital is the resources which are required to consider for the fluctuations in the business activities and it is also known as the circulating or variable working capital. Fabozzi and Peterson (2003: 679) define temporary working capital as the difference between actual working capital and permanent working capital, so temporary working capital arises from seasonal fluctuations in a firm's business. Hence; the amount of temporary working capital fluctuates during the year as it is indicated in Figure 2; below:

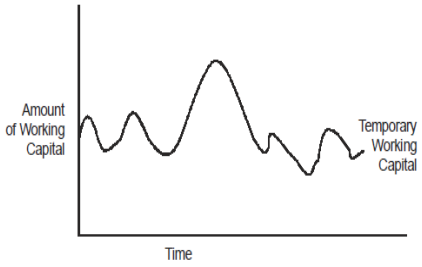

Figure 2: Temporary Working Capital

Source: Paramasivan and Subramanian (2009: 153)

Seasonal and special working capitals are explained below as the components of temporary working capital.

1.6.4.1. Seasonal Working Capital

Seasonal working capital is defined as the amount to meet the seasonal needs of the businesses. As they experience seasonal fluctuations; businesses need a larger amount of current assets at specific intervals to solve the demands of the seasonal busy periods.

1.6.4.2. Special Working Capital

All businesses have to be prepared to meet unforeseen risks and they are required to have additional funds for unstated periods to meet contingencies like a sudden demand of products, war contracts and supply of new products to new enterprises also rising prices etc. These are some of the circumstances that necessitate for special funds so special working capital is the funds required meeting the special exigencies in unforeseen conditions.

1.7. Working Capital Cycle

Harrington (1993: 104) explains working capital cycle as the ebb and flow of funds through the company in response to changes in the level of activity in manufacturing and sales. It is the amount of time that elapses between investing in products and receiving cash from their sales so that businesses should strive to keep the working capital cycle as short as possible because a short working capital cycle implies that a firm has a good cash flow. Kavitha (2007) believes that the cheapest and the best sources of cash exist as working capital right within a business; hence, good management of working capital will generate cash which will help improve the business and reduce risks.

Good cycle seeks to balance the incoming and outgoing cash into businesses. Johnson (2004) accepts that the key to understanding a company's working capital cycle is to know where payments are collected and made, and to identify areas where the cycle is stretched and can potentially be reduced. The working capital cycle is a diagram that shows the incoming cash, what it is used for and how it leaves the firm. When a company needs cash, it is good to use cash from the working capital cycle because it is cheaper than the other sources of finance, such as loans**.**

The diagram below shows how the working capital cycle works.

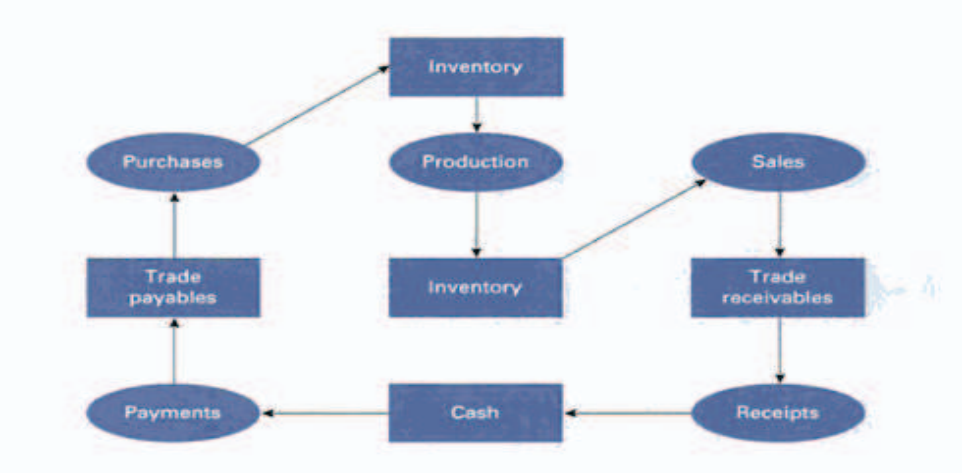

Figure 3: Working Capital Cycle

Source: Walton and Aerts (2006)

Working capital cycle varies significantly among different kinds of companies (Harrington, 1993: 105) thus; the diagram of working capital cycle varies from one company to another company or types of businesses. Some firms may have very long cycles between producing the product and collecting cash from sales while some of them may acquire raw materials a long time before the product can be produced. The firm should calculate its cycle first, after that, it will be possible to reduce or eliminate time lags within the cycle comparing to the former condition.

1.8. Working Capital Management Policies

Establishing a working capital policy and carrying out that into business operations are regarded as working capital management (Brigham and Houston, 2003: 689) so working capital management policies have influence on performances of the firms. Therefore; working capital management policy is a method of making investment by using current assets and financing firms' assets by using short term liabilities (Bandara and Weerakoon-Banda, 2011: 2). Aggressive, moderate and conservative approaches to working capital financing are the well known working capital management policies in the literature explained below:

1.8.1. Aggressive Policy

Aggressive working capital policy prefers the company as keeping really low amount current assets and tries to pay their payable as late as possible; hence, they invest most of their assets into investment and keep less cash on hand. Then aggressive working capital policies are concerned with higher return and higher risk. If sales of the firms are volatile and the company wants to grow, it is better to use an aggressive policy. The aggressive approach to working capital financing has their working capital financed by short term loans, acquire maximum risk and revenue with minimum cost.

1.8.2. Moderate Policy

Moderate working capital policy works in an arrangement where the current assets of the businesses are used perfectly to match current liabilities; thus, it implies that a company will simply keep enough cash on hand due to pay for their liabilities.

Moderate policy is a medium risk proposition which prefers financing temporary working capital via short term loans while having permanent working capital funded by equities and long term debts.

1.8.3. Conservative Policy

Conservative working capital policy is associated with the lowest risk and revenue including the maximum cost due to financing the total working capital amount by the equities and long term loans.

The figure below illustrates the comparison of the working capital policies according to the amount of sales and current assets:

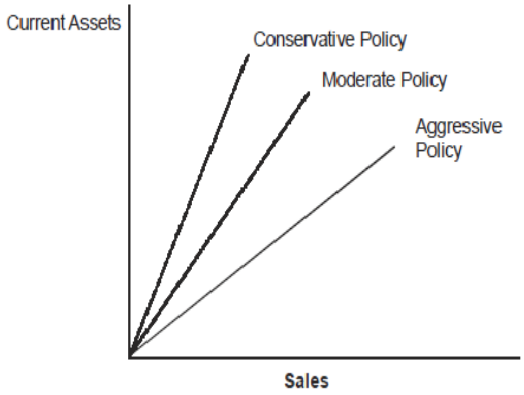

Figure 4: Working Capital Policies

Source: Paramasivan and Subramanian (2009: 160)

Firms can minimize financial risk and improve its overall performance if firms have a well-though working capital management policy by understanding the role and drivers of working capital management (Nazir and Afza, 2009). The policies also mention the importance of working capital management and how working capital management policy affects firm's profitability.

1.9. Objective of Working Capital Management

The objectives of working capital management are to increase the profitability of a company and to ensure that it has sufficient liquidity to meet short term obligations as they fall due and so continue in business (Pass and Pike, 1984). Liquidity refers to how easy it is to convert assets to cash, a firm's liquidity assessment is compulsory so that

decline in liquidity may cause bankruptcy. Every business needs profitability for their survival so they aim at raising the income or reducing their expenses. The method in which current assets are managed will affect the profitability of business.

Fillbect and Krueger (2005) assert that the objective of working capital management as keeping the balance of each component of working capital and seeking to obtain the optimal level of working capital in a firm. Therefore; companies need enough working capital and well administration of its components to do their operations.

Gitman (2009: 645) explains that the objective of working capital management as to minimize the cash conversion cycle by using turning over inventory as quickly as possible, monitoring account receivable and their collection process besides paying accounts payables slowly.

PART 2: WORKING CAPITAL AND CORPORATE PERFORMANCE

This part explains the relationship between "Working Capital" and "Corporate Performance" in detail. Therefore, Factors Determining Working Capital Requirement**,** Ratio Analysis as Business Performance Analysis and Impact of Working Capital Management on Firm's Financial Performance are discussed respectively.

2.1. Factors Determining Working Capital Requirement

Working capital requirement of businesses are determined by number of variety factors. Firms should be aware of these determinants while deciding on the optimal level of working capital needed and timing for business activities. Some of the key factors to determine the working capital requirement are listed below (Paramasivan and Subramanian, 2009: 155-156):

1. Nature and Size of the Business
2. Firm's Production Policy
3. Firm's Credit Policy
4. Growth and Expansion of Business
5. Firm's Term of Purchases and Sales
6. Firm's Dividend Policy
7. Changes in the Technology
8. Taxation Policy

2.1.1. Nature and Size of the Business

The nature of the firm affects the working capital decisions. Commonly; retail stores and manufacturing organizations need more working capital than the service business organizations. This is because a service enterprise has less amount of stock compared with other types of businesses. There are less credit transactions in service organizations while in manufacturing or retail store, credit sales are in large amount; thus, they need more working capital.

2.1.2. Firm's Production Policy

Production policy of the firm also influences the working capital requirement. If the company maintains a uniform production policy, there is a need of regular working capital and when the production policy of the company depends upon the situations or conditions, working capital requirement should be acquired as to the conditions laid down by the company. On the other hand, the firm's production cycle is also affected by the working capital requirement as it is the time taken to convert raw materials in to finished products. The longer the productions cycle, the greater is the requirement of working capital. The firm should strive to shorten the period of the production cycle in order to minimize working capital requirement.

2.1.3. Firm's Credit Policy

Credit policy is also one of the factors that affecting the working capital requirement of business. If the company maintains liberal credit policy to collect the payments from its customers, then they have to maintain more working capital. On the other hand; the firm adopting strict credit policy and grant credit facilities for few potential customers, will require less amount of working capital.

2.1.4. Growth and Expansion of Business

More working capital is required during the growth and expansion of the business because a developing business needs some additional working capital as they incur extra expenses at the initial stages.

2.1.5. Firm's Term of Purchases and Sales

If the credit terms of purchases are more favorable and those of sales are less liberal, less cash will be invested in inventory. Also if working capital requirements can be reduced when credit terms are more favorable, then a firm gets more time for payment to creditors or suppliers. So the firms having opportunity to have greater credits with banks; need less working capital.

2.1.6. Firm's Dividend Policy

The dividend policy also affects working capital requirement. For example, the need for working capital can be met with the retained earnings. If a firm retains more profit and distributes lower amount of dividend, it needs less working capital.

2.1.7. Changes in the Technology

Technological developments can have significant impacts on the level of working capital; when a new process emerges due to technological changes, it reduces the need of working capital for the company.

2.1.8. Taxation Policy

The tax policy of governments affects the working capital decisions because the amount of tax to be paid is decided by the tax regulations. When the government imposes heavy tax on business firms, they remain with very little profits for distribution and retention purpose. That is why the firm has to borrow additional funds to meet their increased working capital needs. The pressure on working capital requirement is minimized when there is a liberalized tax policy. In general, if tax liability increases, it will lead to an increase in the level of working capital and vice versa.

2.2. Ratio Analysis as Business Performance Analysis

Business performance is very important for various stakeholders, thus; company owners, creditors, government, managers; current and potential investors, other financial institutions, and employees are interested in models that help to analyze the performance of the corporations. Murphy et al. (1996) suggest that firm performance is a multidimensional concept. According to Sohn et al., (2007) indicators of organization's performance can be departmental such as pertaining to production, finance or marketing, besides Wolff and Pett (2006) argue that two outcome dimensions of firm's performance are dealing with growth and profitability.

Oliver and English (2007) believe that business performance analysis is concerned with 'return on investment (ROI)', and 'return on equity' (ROE). Business owners would first consider increasing the net profit of the company and a firm's net profit is the outcome of a set of integrated performances including operational performance,

financial performance, sales performance and production performance. Consequently, performance assessment tools differ depending on the goals of their outcomes and the outcomes for which they will be used. Financial performance is the concern of all stakeholders, from managers and employees to shareholders and regulatory agency.

There is a discussion about the comparative usefulness of qualitative and quantitative performance measures. In this regard, Ridgway (1956) proves that quantitative measures are undoubtedly useful tools to help us to understand, manage, and improve the organization's functions. Mostly, all organizations have to set their business goals, after that, evaluate their failure and success by using performance measurement processes and it is normally compared with previous achievement, expectation or rivals' achievement in order to decide whether the performance is sufficient or not. According to Birt et al. (2011); financial performance of business must be measured to verify achievement of business goals as expressed in a mission statement of the entities. In general, company performance measures can be grouped in the mentioned basic types as market-based and also accounting-based measurements. Accounting-based measures capture historical performance while market-based measures evaluate the future performance. Therefore; market-based indicators should be used as an attempt to predict future situations because they are mostly driven by factors that cannot be controlled by the firm's managers.

The most important objective of creating a new business is to obtain profit from its capital. Particularly; profit maximization which is defined as maximizing profit on assets also shareholders' benefits are the core financial demonstrations of a firm's effectiveness (Chakravarthy, 1986). However, operational performance is as important as financial performance. According to Hofer and Sandberg (1987); operational performance measures -which might include growth in sales and market share- provide a broad definition of performance because they focus on the factors that eventually lead to financial performance.

Palepu et al. (2000 in Al-Tally, 2014: 49) mention that the first method to gain information about a company's performance is the financial ratio analysis involving the comparison of various figures from the financial statements, and the second one is cash

flow analysis allowing managers to examine a firm's liquidity and how the firm manages its operations, investment and cash flows.

2.2.1. Ratio Analysis in Working Capital Management

Applying an effective working capital management is vital for every business to run its operations smoothly and also justify the survival. Therefore; the two main aspects of working capital management are ratio analysis and management of individual components of working capital like cash and cash equivalents, short term market securities, accounts receivables, inventories and short term liabilities.

One of the most widely used financial analysis tools is ratio analysis which can be expressed as a percent, rate as well as a proportion. It is defined as the analysis of relationship between two or more line items on the fundamental financial tables. Ratio analysis helps to evaluate the firm's performance and it can be classified into four categories as liquidity, leverage, activity and profitability ratios. Most common examples of liquidity ratios include; current ratio, acid-test (quick ratio) ratio and cash ratio besides leverage ratios are grouped in the following categories; total debts to total assets, total debts to equity, short term debts to total debts, short term debts to total assets and long term debts to total assets ratios. Activity ratios can be classified by the rates as total assets turnover ratio, account receivable turnover ratio, inventory turnover ratio, receivables collection period, inventory conversion period, days payables outstanding and cash conversion cycle. Profitability ratios are calculated generally by four parts; return on total assets, returns on total equity, return on sales and gross profitability.

Ratio analysis leads management to identify areas of focus such as inventory management, cash management, accounts receivable and payable management. Inadequate working capital may result in failure to meet the liabilities while excessive working capital may be an idle one and create unneeded cost, thus; business should use ratio analysis in managing working capital appropriately to avoid the failure. Because of the issues mentioned above; financial managers need to be careful about benefiting ratio analysis in order to balance inadequate and excessive working capital.

2.2.2. Financial Ratios

Financial ratios are significant indicators of a firm's performance mostly provided by the balance sheet and income statement calculated by dividing one financial data to other, hence; it is a tool that can be used to conduct a quantitative financial analysis by a firm's manager. They measure the achievement of objectives, serve as a financial control tool and help planning for the firm's future objectives.

Ratios can also be used by investors and creditors to assess the financial condition of a business besides analyzing the firm's stock and bonds help investors to choose the right time and right company to invest their money. Furthermore; ratios can be utilized to build up a picture of a firm relative to its closest competitors in the same industry (Bird and McHugh, 1977: 43) because of this, use of ratio can provide a good idea of firm performance than comparing ratios with other industries. Additionally, usefulness of a ratio analysis which can be divided into four main categories as liquidity ratios, leverage ratios, activity ratios and profitability ratios depending on a user's skillful interpretation, thus ratios can be used to evaluate a firm's financial health and its operational performance.

2.2.2.1. Liquidity Ratios

Liquidity ratios measure the ability of a firm to pay its short term obligations which are due with a year. Hence, creditors, bankruptcy analysts and mortgage originators frequently use the liquidity ratios to determine whether a company will be able to continue as a going concern. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short term debts and the reverse means insufficiency. A firm's ability to turn short term assets into cash to cover debts is of the utmost importance when creditors are seeking payment.

The mentioned liquidity ratios include current ratio, acid test ratio and cash ratio, which are explained below, respectively.

Current ratio is also called as "working capital ratio" and it is defined as a liquidity ratio that measures a firm's ability to pay off its current liabilities with current assets and, in this way, current ratio shows the strength of the company's working capital position.

Therefore; it is important especially for creditors because it indicates the liquidity of the company via current assets to current liabilities. Ideally companies prefer to have a current ratio of 1,5 to 2 (Foster, 1978) since it must be very close to 2 for the service sectors.

Acid-test ratio also defined as quick ratio is a well known type of liquidity ratios which is calculated as "Current Assets – Inventories / Current Liabilities" and the value is suggested to be "1" as the ideal rate since up to 0,8 is admitted for the manufacturing companies especially in the emerging economies. Therefore; acid-test ratio has quick assets such as cash, short term market securities and account receivable as the numerator while current liabilities as the denominator (Horngren et al., 1999: 784).

Cash ratio is a commonly used rate as a measure of a company's liquidity and it measures the immediate amount of cash available to satisfy short term liabilities so it is suggested to be the most conservative look at a company's liquidity. The mentioned rate is computed by dividing the amount of cash and cash equivalents by current liabilities and value is proposed to be 0,20 as ideal rate until to 0,18 is accepted for service companies while up to 0,15 is recognized for manufacturing companies, respectively.

2.2.2.2. Leverage Ratios

Leverage ratios are used to evaluate a company's debt level and they are also called as solvency or capital structure rates. Financial leverage ratios suggested to be high indicate that the firm has debt in higher level hence higher risk, comparing to a firm with lower leverage level. Creditors and stockholders demand higher return but dislike higher risk. Therefore, their interest is in the company's ability to pay its debt when it comes due. Palepu et al. (2006: 331) express that shareholders can potentially benefit from financial leverage even their risk may increase then. Thus, leverage ratios measure the risk that a firm may face and key leverage ratios to be mentioned here are total debt to total assets ratio, short term debt to total debts ratio, short term debt to total assets ratio, respectively.

Total debt to total assets ratio also known as "Debt Ratio" measures the percentage of a company's assets that are financed by debt. Further; it is one of the most important

ratios for performance evaluation of wholesaler and retailer companies because it states the financial health of any businesses, calculated as follows (Edmonds et al. 2008, 581):

Total Debt to Total Assets = Total Liabilities / Total Assets

50 % (or up to 60 %) is accepted as the ideal value in the finance literature for the mentioned value.

Short term debt to total debts ratio is the share of short term liabilities in total debts indicating to what extent the short term debt is used for the firm. The value of the proportion is suggested to be lower if the company operates in manufacturing sector and it is the opposite while it is a labour intensive one.

Short term debt to total assets ratio is a financial ratio that indicates the percentage of a firm's assets that are provided via short term debt and it is computed by dividing the amount of short term debt by total assets. The formula to calculate this ratio is as the following:

Short Debt to Total Assets Ratio = Total Short Term Debts / Total Assets

The value of the mentioned ratio depends on the sector they operate in, related with the ideal value of leverage ratio; they are generally evaluated to be between 20 % and 30 % according to the field.

2.2.2.3. Activity Ratios

Activity ratios are used to analyze how well a company uses its assets. According to Gitman (2009: 59), the mentioned ratios measure the speed with which various accounts are converted into sales or cash inflows or outflows. Some examples of activity ratios that can be used to evaluate a business's financial performance are listed in the following sections, as it is seen below:

- ✓ Total Assets Turnover Ratio
- ✓ Account Receivable Turnover Ratio
- ✓ Inventory Turnover Ratio
- ✓ Days Sales Outstanding
- ✓ Days Sales of Inventory

- ✓ Days Payables Outstanding
- ✓ Cash Conversion Cycle

Total assets turnover ratio is a financial ratio that measures the efficiency of a company's use of assets in generating sales. Harrington (1993: 16) mentions that the first ratio for an analyst to evaluate the efficiency of any company is total asset turnover. It considers all; current and fixed assets, such as property plant and equipment as well as inventory, accounts receivable and other current assets.

The formula is as follows; Total Assets Turnover Ratio = Net Amount of Sales/Total Assets, hence; it is just the scale of assets' conversion into sale.

Accounts Receivable Turnover measures how quickly customers pay on their accounts and it also indicates the number of times the amount of accounts receivable is collected throughout the year. It is calculated by dividing the credit sales to the total accounts receivable to form the account receivable turnover ratio. Account receivable turnover ratio can be used by company to ensure a healthy receivable in the future and because a rapid turn is fine; the bigger the number is the better.

Inventory turnover ratio is used to indicate the number of times inventory is sold during the period and its main purpose is to measure the liquidity of the inventory. The inventory turnover ratio is computed by dividing cost of goods sold by the average inventory. Low inventory turnover sales ratio displays the company has too much inventory while higher ratio means that the inventory is sold quickly.

The days sales outstanding is also called Receivables Collection Period and is refers to the average number of days for customers to pay their bills. The days sales outstanding formula is the following:

Days Sales Outstanding = Account Receivables*360 days / Sales

Gitman (2009) and Hatten (2008) (in Finau, 2011: 44) state that all firms extending credit must take this ratio into account in order to determine the effectiveness of their credit provided to customers and their collection policies. A low average collection period is normally a positive sign while high average collection periods indicate the number of uncollected account receivables, either.

Days sales of inventory or inventory turnover in days also called as Inventory Conversion Period is a financial measure of a firm's performance that indicate the number of days taken for a business to sell off their inventory. Days sales of inventory are beneficial in evaluating the efficiency of the organization in inventory management policy. Therefore, it is calculated by the following equation:

Days Sales of Inventory = Inventory*360 days / Cost of Goods Sold

Days payables outstanding also known as Payables Deferral Period is defined as a measure for the company to calculate the number of days taking to pay its account payables to creditors. It is computed as the following:

Days Payables Outstanding = Accounts Payable*360 days / Cost of Goods Sold

The managers prefer the Payables Deferral Period to be higher as much as possible.

The cash conversion cycle is the length of time between a firm's purchase of inventory and the receipt of cash from accounts receivable. Thus, a firm's average cash conversion cycle is calculated by adding inventory conversion period to receivables collecting period and subtracting payables deferral period (Brigham and Houston, 2003: 692) as the formula represented below:

Cash Conversion Cycle = Receivables Collection Period + Inventory Conversion Period – Payables Deferral Period

Cash conversion cycle is useful for the company to meet its obligations at a suitable time which will improve the goodwill of a business. However, it is a measure for the efficiency of working capital management as it indicates how quickly current assets are converted into cash (Deloof, 2003: 573-587); thus, the cash conversion cycle can be significant in comparing competitors and evaluating management efficiency.

2.2.2.4. Profitability Ratios

Profitability ratios are the most frequently used tools of financial ratio analysis which are used to determine the company's income and profit generated for a given period of time. A firm's overall efficiency and performance can also be evaluated through the profitability ratios, according to Weygandt et al. (2002 in Ganbaatar, 2010: 17)

profitability is frequently used as the ultimate test of management's operating effectiveness. Hence both creditors and investors interest in evaluating profitability because it influences the business' ability to obtain debt and equity financing besides the organization's liquidity position and ability to grow. The major profitability ratios to mention are return on total assets, return on total equity, return on sales and gross profitability.

ROA also called as return on investment (ROI), indicates the firm's effectiveness in generating profits with its available assets (Gitman, 2009: 68). In general, a high ratio on ROA suggests better performance and good opportunities for business' growing, consequently; it is considered as a critical ratio for determining a firm's overall level of operating efficiency and ROA is calculated as; Return on Assets = Net Profits / Total Assets.

ROE is computed by dividing the net income to average company stockholder's equity (Harrington, 1993: 22) so it is another measure of a company's profitability that disclose how much profit is generated with the shareholders' capital. It has some alternative name such return on average common equity, return on net worth, return on ordinary shareholder's fund and it is suggested to be the success of managers.

ROS which is used to evaluate a company's operational efficiency is also known as a firm's "operating profit margin" and it is calculated as the following equation:

Operating Profit Margin Ratio= Net Income / Net Sales

So; the result of this calculation is expressed as a percentage besides high operating profit margin ratio indicates how effective a firm is at converting sales into profit.

Gross profitability ratio also called as "gross profit margin ratio" is calculated by dividing gross profit to sales, therefore; it is a measure for the proportion of revenue is converted into gross profit. Gross profitability ratio indicates the operational efficiency for the company so the higher gross profit margin is better as the other profitability ratios.

2.3. The Analysis of the Adequacy of Working Capital

According to Paramasivan and Subramanian (2009: 154), a business concern must maintain a sound working capital position to improve an efficient financial management. The enterprises should consider their working capital level in order to keep their operations sustainable since non of the firms can operate smoothly without an adequate amount of working capital. Hence; the adequacy of working capital is essential for the firms so as to operate without interruption, raise the profitability without increasing the risk level and meet the liabilities on time (Aydın, 2003).

2.3.1. The Inadequacy of Working Capital

The inadequate working capital level is usually defined as the shortage of working capital for business enterprises meaning that the firm does not have sufficient amount of funds in order to achieve the target because the lack of working capital leads to failure in sustaining the activities moreover it may cause a decline in profitability, reduction of dividends to shareholders, failing in paying the suppliers and meeting the liabilities on time in so much as financial distress or even bankruptcy of the firm.

The disadvantages of inadequate working capital are shown below by Bhat and Rau (2008: 142-143):

- Loss of Reputation: A concern which has inadequate working capital loses its reputation as it can not pay its short-term liabilities in time.
- Lower Creditworthiness: Because it can not pay the credits in time; the firm loses its creditworthiness and will not be able to get better credit facilities.
- Cash Discounts: The firm can not buy its requirements in bulk due to inadequate working capital and it can not avail of discounts, etc.
- Difficulty in Exploiting Favourable Market Conditions: Due to the lack of adequate working capital; taking advantage of favourable market conditions and undertaking profitable projects becomes more difficult for the firms.
- Irregularity in Payment of Day to Day Expenses: The firm can not pay day to day expenses of its operations so that irregularity creates inefficiencies, it

causes the costs to increase furthermore the profitability of the business decreases.

- Low Rate of Return: The rate of return on investment decrease due to the shortage of working capital.
- Efficient Use of Fixed Assets: Utilizing of fixed assets efficiently becomes harder due to the inadequate amount of liquid funds.

2.3.2. The Adequate Level of Working Capital

Working capital is the life blood and nerve centre of any business enterprise, therefore; it is very vital to maintain an adequate amount of working capital as it is mentioned above for a company to operate smoothly. So; the adequate level of working capital assists in raising credit standing of a business enterprise due to better terms on services or goods purchased, lower cost of products by the accepted cash discount, favorable rates of interest and so on.

The advantages of adequate level of working capital by Rao (2006: 356) are mentioned in the following lines:

- The adequate working capital amount of the business ensures solvency by providing sufficient liquidity to the enterprise.
- It adds to creditworthiness and reputation of the enterprise by ensuring prompt payments to suppliers of raw-materials and other creditors of the firm.
- Adequate working capital helps a firm to benefit from cash discount and it adds to the earnings of their business.
- Banks and other short-term lenders base their decisions on the adequacy of the working capital hence such kinds of analyses indicate the sufficient capacity and liquidity position of the borrowing enterprise.
- Adequate working capital ensures the availability of the funds in case of unfavorable conditions.

- Earning more profit is not a sufficiency guarantee to enable the firm paying dividends in cash, forever while the adequate level of working capital amount make dividends possible to be paid in, quickly and regularly.
- A business maintaining adequate working capital can afford to buy raw materials and other accessories as and when needed which ensures uninterrupted flow of production. Therefore; adequate working capital contributes to fuller utilization of resources of the enterprise.
- An enterprise maintaining adequate working capital can afford to hold up its stock of finished goods and wait for better marketing opportunities.

2.3.3. Excessive Working Capital

Excessive working capital is defined as idle funds which earn no profit for the business. Similarly, excessive working capital leads to some problems in the business activity because it creates bad debts which can lastly reduce the profitability of the firm. Therefore, excessive and insufficient working capital levels are mentioned to be negative for any business enterprise.

The disadvantages of excessive working capital are described below, according to Bhat and Rau (2008: 143):

- Idle funds: Excess of working capital means idle funds which earn no profits for the business hence the business can not earn a proper rate of return on their investments due to the idle funds.
- Decline in Dividends: The price of shares besides the amount of dividends may decrease due to lower rate of return on investments.
- Unnecessary Purchase of Inventories: The excessive working capital may lead to unnecessary purchasing and accumulation of inventories causing more losses.
- Defective Credit Policy: The excessive working capital implies excessive debts and defective credit policy which may cause higher incidence of bad debts.
- Speculative Transaction: The working capital in excess gives rise to speculative transactions.

2.4. Impact of Working Capital Management on Firm's Financial Performance

Working capital management requires special care particularly in case of funds' insufficiency as the cost of capital increases then and it deals with administration of the cash and equivalents, account receivable, inventory and current liabilities, due to the term issue. As performance or profitability of a company mostly depends upon the manner of its working capital management, defective management of working capital may lead firms to under performance, reduce profitability and also cause insolvency and even bankruptcy.

The management of working capital influences the level of profit generated by firm e.g. excessive balances of accounts receivables is an indication of weak credit policy, which may result in a higher possibility of bad debts and can finally impacts the profitability of the firm. Besides holding a high level of inventory leads to higher costs, deterioration in the value due to damage, obsolescence, theft and wastage hence the costs mentioned above will ultimately affect firm's profitability. Moreover; poor cash management will cause higher costs related to holding cash, financial distress including interest costs, debt restructuring costs and legal costs further lost investment income, which can influence the profit earned by a firm.

According to Deloof (2003: 585) and Raheman and Nasr (2007: 294); businesses have large amounts of money invested in working capital therefore working capital management has an important effect on firm's profitability. So that several researchers have focused to evaluate the relationship between working capital management and profitability shown in the following:

Şamiloğlu and Demirgüneş (2008) investigate the impact analysis of working capital management on profitability of firms with reference to Turkey in their mutual study, the data utilized is collected for a sample of manufacturing firms listed at Istanbul Stock Exchange for the period from 1998 to 2007. The results suggest that receivable collection and inventory conversion periods with liquidity have a negative effect on the profitability of the firm while growth is positively associated with profitability, however CCC size and financial assets do not have significant influence on the profitability of the firms.

Affects of working capital management on firms' performance is also examined by Vural et. al. (2012) for Turkey via companies listed on Istanbul Stock Exchange by applying data for a sample of 75 firms for 2002-2009 period. The results suggest that receivables collection period and CCC are negatively associated with profitability of the firm while firm size is positively related to firms' profitability. Other working capital management components and firm value do not have significant affect except CCC and leverage interestingly on the firm's profitability.

The relationship between working capital management and profitability is also analyzed in another study by Gill et. al. (2010) for American firms listed on New York Stock Exchange by using the data of 88 firms for a period of three years between 2005 and 2007. They observe substantial relationship between working capital management and firm's profitability statistically consequently a negative relationship between average days of accounts receivable and firms' profitability while positive relationship between CCC and profitability are concluded.

A sector-wise analysis of working capital management and firm performance is investigated by Raheman et al. (2010) by applying data for 204 Pakistani manufacturing companies listed on Karachi Stock Exchange during the period of 1998-2007. The results show that there is sectoral deviance concerning different measures of working capital management and also the results vary substantially between sectors and in some sectors, some of the measures play their significant role in predicting the profitability while in others it has no important role. This study indicates that there is a negative as well as positive relationship between liquidity and profitability, on the other hand, several researches show that there is negative relationship between liquidity and profitability.

Deloof (2003) examines the relationship between working capital and corporate profitability for a balanced panel set of 1.009 Belgian firms for a period of six years from 1991 to 1996. He reaches a conclusion that a significant negative relationship exists between gross operating income and the number of days' account receivable, inventories and accounts payable so that the shareholders' value can be increased by reducing the number of day's accounts receivable and inventories to a reasonable minimum level besides the negative relation between payables deferral period and

profitability is consistent with the view that less profitable firms wait longer to pay their bills.

In this section we show the impact of working capital management on firm's profitability and also how inadequate and excessive working capital levels are negative for any company. Thus having an optimum level of working capital enables firms to continue their activities without problem. The four types of ratios such as liquidity, leverage, activity and profitability rates are presented in this part. We also discuss an overview on the previous studies related to the investigative connection between working capital and profitability of firm.

PART 3: IMPACT OF WORKING CAPITAL MANAGEMENT ON PERFORMANCE OF TRADING FIRMS

This chapter is organized as follows; conceptual framework, literature review, research design, operational definitions, hypotheses development, data collection procedure, sampling design, measurement of variables, specification of models, data analysis technique, descriptive statistics, correlation, and regression analyses.

3.1. Conceptual Framework for the Study

The conceptual framework that can be followed when evaluating the relationship between working capital management and performance of the selected firms which is constructed for the purpose of this study is indicated in the figure below including the ratios; Receivables Collection Period, Inventory Conversion Period and Payable Deferral Period for CCC as the independent variables additionally the ROA as the dependent one. Furthermore; Firm Size, Sales Growth, Debt Ratio and Current Ratio are the picked control variables in the study. Framework is based on the studies investigating the relationship between the working capital management and profitability of the firms.

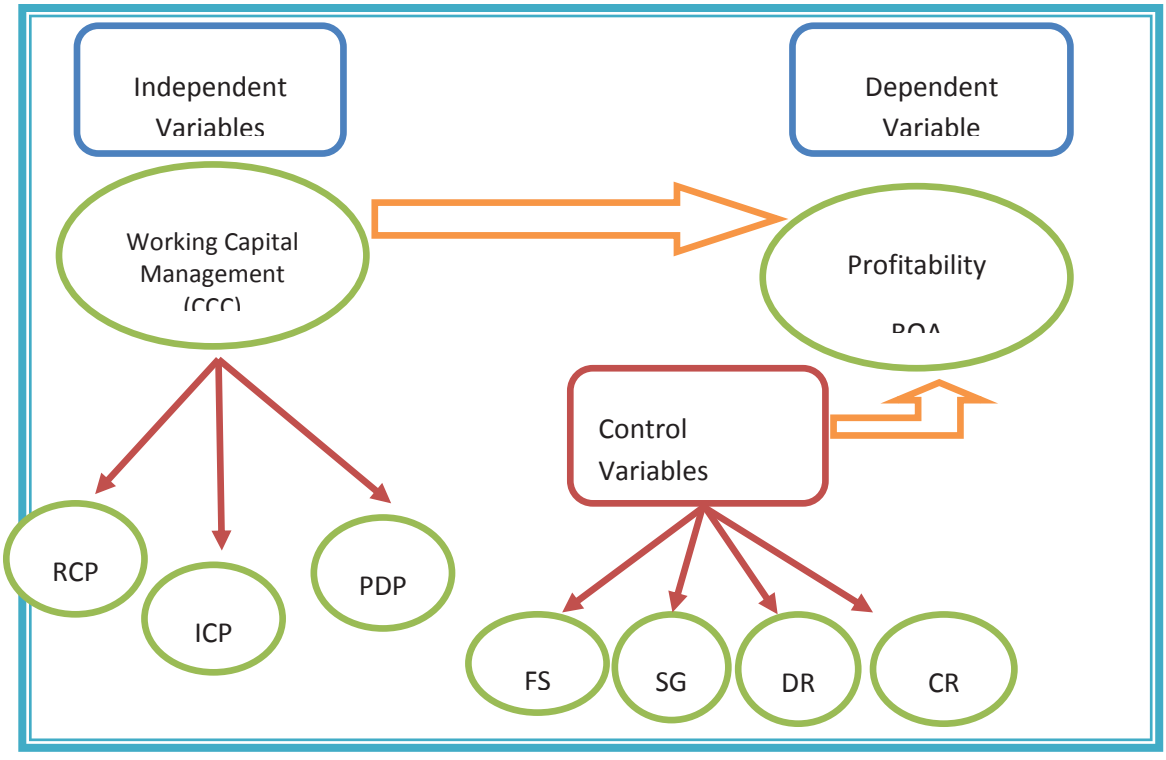

Figure 5: Conceptual Framework

Source: Researcher's Own Design

3.2. Literature Review

The following paragraphs present some of the studies about the relationship between profitability and working capital management, from worldwide and Turkey:

The relationship between CCC as proxy of working capital management and ROA in the US firms is also investigated by Soenen (1993: 53-57). The results show that there is a negative relationship between CCC and ROA.

Jose et al. (1996: 33-46) analyze the relationship between aggressive working capital management and profitability of the US firms by using CCC as a measure of working capital management. They find that there is a significant negative relationship between CCC and profitability, indicating that more aggressive working capital management is related to higher profitability.

Shin and Soenen (1998: 37-45), study the efficiency of working capital management by measuring CCC and firm profitability. A sample of listed American firms in 1975-1994 period is utilized by using correlation and regression analyses. They find that there is a strong negative relationship between CCC and firm's profitability.

To study the relationship between profitability and liquidity; Eljelly (2004: 48-61) uses a sample of 929 joint stock companies from Saudi Arabia by utilizing correlation and regression analyses. The findings show that there is a significant negative relationship between the profitability of the firm and its liquidity indicators such as CCC and current ratio.

Padachi (2006: 45-58) examines how working capital management affects firms' performance on Mauritian small manufacturing firms during 1998 to 2003 by utilizing ROA as proxy for firm's profitability (performance). The results show that high investment in inventories and account receivables is associated with lower profitability.

Rehman (2006) examines the impact of working capital management on the profitability for a sample of 94 Pakistani companies listed and operated on Islamabad Stock Exchange for a 5 years period, from 1999 to 2004. The results indicate that there is a strong negative relationship between RCP, ICP, PDP, CCC and Net Operating Profitability.

Lazaridis and Tryfonidis (2006: 26-35) examine a sample of 131 companies listed on Athens Stock Exchange and investigate the relationship between working capital management and corporate profitability for the period of 2001-2004. Gross operating profit is used as a proxy of profitability besides CCC is utilized as a proxy for working capital. They discover that CCC is a significant negative determinant associated with the firm's gross operating profit. The findings reveal that managers can create profits for their companies by handling the CCC correctly and keeping each of the components such as inventory, accounts receivable, accounts payable at an optimal level.

Teruel and Solano (2007: 164-177), aiming to analyze the effect of working capital management on profitability, use a sample of Spanish SMEs. The findings indicate that there is a negative association between RCP, ICP and ROA.

Raheman and Nasr (2007: 279-300) examine the relationship between firm profitability and management of working capital over a sample of 94 companies listed on Karachi Stock Exchange from Pakistan for a 5 years period, from 1999 to 2004. The results of the research indicate that a negative relation exists between CCC and Net Operating Profitability.

Dong et al., (2010: 59-67) discuss the relationship between working capital management and profitability by using a sample of 130 companies listed on Vietnam Stock Market during the period from 2006 to 2008. They find that there is a negative relationship between ICP and RCP and operating profit while there is positive connection between PDP and profitability.

Nobanee et al., (2010), have studied the relationship between the CCC and profitability by using a sample of Japanese companies during the period from 1990 to 2004. Findings indicate a negative relationship between ROA and CCC.

Mohamed and Saad (2010: 140-147) study Bloomberg's database for a sample of 172 listed firms from Bursa Malaysia (formerly known as Kuala lumpur Stock Exchange) main board for 2003-2007 period by using correlations and multiple regression analysis. They indicate that current assets to total assets ratio shows positive significant relationship with Tobin Q, ROA and Return on Invested Capital while CCC, current

ratio and current liabilities to total assets ratio indicate negative significant relations with Tobin Q, ROA and Return on Invested Capital.

Ashraf (2012: 21-45) investigates how working capital management is associated with profitability by using net operating profit as a proxy for profitability and CCC as a proxy for management of working capital in a sample of the Indian firms listed on Bombay Stock Exchange. He has found that there is a negative relationship between the two variables.

Şamiloğlu and Demirgüneş (2008: 44-50) study the effect of working capital management on profitability in a sample of firms listed on ISE by using regression model during the 1998-2007 period. The results of study conclude that there is a negative relationship between RCP, ICP, leverage ratio and profitability while there is a positive relationship between growth (in sales) and profitability of the firm.

Uyar (2009: 186-193) investigates the relationship of CCC with firm size and profitability for merchandising and manufacturing sector firms listed on ISE for period 2007 by employing ANOVA and correlation analysis. The results of the study indicate that manufacturing sector has longer CCC comparing to merchandising industries and also the results show that there is a significant negative correlation between CCC and profitability besides between CCC and firm size.

In a research conducted by Şen and Oruç (2009: 109-114); the relationship between the efficiency level of working capital management and profitability for the companies listed on ISE is analyzed for the period of 1993-2007 by utilizing CCC as proxy of working capital and ROA for profitability. They find that there is negative relationship between RCP, ICP, CCC, net working capital level, current ratio and ROA.

Karaduman et al., (2011: 61-67) examine the relationship between working capital management and profitability for emerging companies from Turkey in the 2005- 2009 period. CCC is used as proxy of working capital management efficiency and ROA is employed for profitability. They find a positive relationship between decreasing CCC and ROA.

Another research conducted by Karadağlı (2012: 36-44) evaluates the effect of working capital management on profitability by using a sample of Turkish SMEs for a period of

9 years, from 2002 to 2010. She find that there are positive relations between CCC, Net Trade Cycle and Return on Sales, stock market return for SMEs companies. But CCC and Net Trade Cycle indicate negative significant relations with Return on Sales and stock market return for bigger companies.

3.3. Research Design

This study employs the explanatory research design which is also known as "hypothesis-testing" to investigate the relationship between working capital management and corporate performance because according to Kothari (2004: 39); hypothesis-testing research attempts to determine a causal relationship between variables. There are several studies from different countries; both in Turkey and worldwide, related to the topic mentioned above but the impact of working capital management on corporate performance for trading companies in Turkey is suggested to be neglected. Hence; the main purpose of this research is to find out whether or not there is a relationship between the dependent variable i.e. ROA as profitability ratio and independent variables including RCP, ICP, PDP and CCC by using the secondary data acquired from ISE Trade Index (BIST XTCRT) for wholesaler and retailer companies in Turkey for a 5-year period of 2010-2014.

3.4. Operational Definitions

Working capital management refers to a managerial accounting strategy which is concerned with maintaining both components of working capital; current assets and liabilities, at an efficient level with respect to one another. Due to the purpose of the study; the variables i.e. ROA, RCP, ICP, PDP, CCC, FS, SG, DR and CR are mentioned below again:

- Return on Assets (ROA) shows a significant percentage that indicates the firm's ability to utilize its resources to produce income. The following is the equation for calculating the return on assets:

ROA = Net Income / Total Assets. (Brigham and Daves, 2007: 269)

- Receivables Collection Period (RCP) measures the number of days receiving cash for business from its customers. It is computed as follows:

RCP= [Accounts Receivable x 360] / Sales. (Deloof, 2003)

- Inventory Conversion Period (ICP) refers to number of days taking for a business to convert its inventory into sales. The formula to calculate the ICP is as the following:

ICP= [Inventories x 360] / Cost of Sales. (Deloof, 2003)

- Payables Deferral Period (PDP) shows number of days taking for a firm to pay its account payables to the business suppliers. The formula is as follows:

PDP= [Accounts Payable x 360] / Cost of Sales. (Al-Mawsheki, 2014: 70)

- Cash Conversion Cycle (CCC) is the period in days between the firm's payment for materials and collection on its sales. The cash conversion cycle formula is;

CCC = Receivables Collection Period + Inventory Conversion Period - Payables Deferral Period. (Brigham and Houston, 2003: 692)

- Firm Size (FS) is the data for total assets which is in the assets classification of a firm's balance sheet. This is measured by the Natural Logarithm of Total Assets (Al-Mawsheki, 2014: 70).
- Sales Growth (SG) is the variation in firm's yearly sales value which is measured as the following:

SG = [(Sales $_{t}$ - Sales $_{t-1}$) / Sales $_{t-1}$] (Deloof, 2003; Padachi, 2006).

- Debt Ratio (DR) indicates the percentage of total assets that were financed by creditors. Debt ratio formula is the following:

DR= Total Debt / Total Assets. (Brigham and Gapenski, 1993).

- Current Ratio (CR) is defined as firm's ability to pay off for its current liabilities with its current assets. The formula is as follows:

CR = Current Assets / Current Liabilities (Paramasivan and Subramanian, 2009).

3.5. Hypotheses Development

As discussed in literature review; several authors and researchers have carried out many studies about the relationship on different variables between working capital management and profitability. Hence; the hypotheses below are formed according to the questions mentioned in the introduction section respectively. That is to say; what is the

relationship between working capital management and Turkish trading firm's profitability over RCP, ICP, PDP, CCC and ROA?

Therefore; the first hypothesis is as the following:

H_o: There is an insignificant relationship between RCP as the working capital management's evaluating criterion and ROA as the proxy of Turkish trading firms' profitability.

H_o: $\beta_1=0$

H_1: $\beta_1\neq0$

H_1: There is a significant relationship between RCP and ROA of the Turkish trading firms.

The second hypothesis is:

H_o: There is an insignificant relationship between ICP and ROA of the Turkish trading firms.

H_o: $\beta_2=0$

H_1: $\beta_2\neq0$

H_1: There is a significant relationship between ICP and ROA of the Turkish trading firms.

The third hypothesis is as follows:

H_o: There is an insignificant relationship between PDP and ROA of the Turkish trading firms.

H_o: $\beta_3=0$

H_1: $\beta_3\neq0$

H_1: There is a significant relationship between PDP and ROA of the Turkish trading firms.

Finally; the fourth hypothesis is as the following:

H_o: There is an insignificant relationship between working capital management that CCC is its evaluating criterion and ROA as the proxy of Turkish trading firms' profitability.

H_1: $\beta_4 \neq 0$

H_o: $\beta_4 = 0$

H : There is a significant relationship between CCC and ROA of the Turkish trading firms.

3.6. Data Collection Procedure

Data used in the study is mainly secondary data and it is required from the selected companies listed on ISE Trading Index through the web page of Public Disclosure Platform (www.kap.gov.tr) and the firms' own web sites for the period of 2010-2014. SPSS software package is used to analyze the data for correlation and regression analyses to establish a model in order to achieve the objectives of the study that ratio analysis is utilized to measure the performance of the firms via the four main significant ratios including the liquidity, leverage, activity and profitability rates.

3.7. Sampling Design

Though 31 wholesale and retail companies are listed on ISE Trading Index currently; a sample of 11 firms is selected because the study is designed to study in the period from 2010 to 2014 which is mentioned today as post-crisis term. So the companies those have not been listed continuously through the period are excluded. The selected companies are shown in the following table:

Table 1: The Selected Trading Firms

Code	Company Name
BIMAS	Bim Mağazalar
BOYNR	Boyner Mağazacılık
CARFA,CARFB	Carrefoursa
DOAS	Doğuş Otomotiv
INTEM	İntema
KIPA	Tesco Kipa
MIGROS	Migros Ticaret
MIPAZ	Milpa
SANKO	Sanko Pazarlama
SELEC	Selçuk Ecza Deposu
VAKKO	Vakko Tekstil

The variables of the companies measured are listed below in Table2.

Table 2: Measurement of Variables and Definitions

Variable	Definition	Measurement
Dependent Variable		
Return On Assets (ROA)	It shows a significant percentage that indicates the firm's ability to utilize its resources to produce income.	ROA = Net Income / Total Assets. (Brigham and Daves, 2007: 269)
Independent Variables		
Receivables Collection Period (RCP)	It measures number of days receiving cash for business from its customers.	RCP= [Accounts Receivable x 360] / Sales. (Deloof, 2003)
Inventory Conversion Period (ICP)	It refers to number of days taking for a business to convert their inventory into	ICP= [Inventories x 360] / Cost of Sales. (Deloof, 2003)

	sales.	
Payables Deferral Period (PDP)	It shows number of days taking for a firm to pay its account payables to the business suppliers.	PDP= [Accounts Payable x 360] / Cost of Sales. (Al-Mawsheki, 2014: 70)
Cash Conversion Cycle (CCC)	This is the period in days between the firm's payment for materials and collection on its sales.	CCC = Receivables Collection Period + Inventory Conversion Period - Payables Deferral Period. (Brigham and Houston, 2003: 692)
Control Variables		
Firm Size (FS)	The data for total assets is in asset classification of a firm's balance sheet.	The Natural Logarithm of Total Assets (Al-Mawsheki, 2014: 70)
Sales Growth (SG)	The variation in firm's yearly sales value based on the past business annual sales.	[(Sales $_t$ - Sales $_{t-1}$) / Sales $_{t-1}$] (Deloof, 2003; Padachi, 2006)
Debt Ratio (DR)	It indicates the percentage of total assets that were financed by creditors.	DR= Total Debt / Total Assets. (Brigham and Gapenski, 1993)
Current Ratio (CR)	It is defined as firm's ability to pay off for its current liabilities with its current assets.	CR = Current Assets / Current Liabilities. (Paramasivan and Subramanian, 2009)

3.8. Specification of Models

Research model is estimated by using similar models specification of Al-Mawsheki (2014) besides Raheman and Nasr (2007). General syntax of model in this study is as the following:

$$ROA_{it} = \beta_0 + \sum_{all}^{n} \beta_i \; X_{it} + \varepsilon$$

ROA_{it} : Return on Assets of firm i at time t

i : The 11 firms analyzed in the study

t : Time = The 5 years from 2010 to 2014.

β_0 : The intercept of equation

β_i : Coefficients of X_{it} variables

X_{it} : The different independent and control variables for working capital management of firm i at time t

ε : The error term

Therefore; this study uses the following specified model:

$$ROA_{it} = \beta_0 + \beta_1(RCP_{it}) + \beta_2(ICP_{it}) + \beta_3(PDP_{it}) + \beta_4(CCC_{it}) + \beta_5(FS) + \beta_6(SG) + \beta_7(DR) + \beta_8(CR) + \varepsilon$$

Model utilized for regressing account receivable is as the following equation:

$$ROA_{it} = \beta_0 + \beta_1(RCP_{it}) + \beta_2 (FS) + \beta_3 (SG) + \beta_4 (DR) + \beta_5 (CR) + \varepsilon \quad \text{(Equation 1)}$$

Model utilized for regressing inventory is as the following equation:

$$ROA_{it} = \beta_0 + \beta_1(ICP_{it}) + \beta_2 (FS) + \beta_3 (SG) + \beta_4 (DR) + \beta_5 (CR) + \varepsilon \quad \text{(Equation 2)}$$

Model utilized for regressing account payable is as the following equation:

$$ROA_{it} = \beta_0 + \beta_1(PDP_{it}) + \beta_2 (FS) + \beta_3 (SG) + \beta_4 (DR) + \beta_5 (CR) + \varepsilon \quad \text{(Equation 3)}$$

Model utilized for regressing cash conversion is as the following equation:

$$ROA_{it} = \beta_0 + \beta_1(CCC_{it}) + \beta_2 (FS) + \beta_3 (SG) + \beta_4 (DR) + \beta_5 (CR) + \varepsilon \quad \text{(Equation 4)}$$

3.9. Data Analysis Technique

Data of the selected trading companies obtained for the research is analyzed by using Descriptive Statistics and Pearson Correlation Analysis to measure the level of relation between the proxy of profitability and independent variables as the working capital management's evaluating criteria. Next, regression analysis is used to explain each model with the hypotheses tested.

In the following subtitles; the results obtained by analyzing the financial reports of the selected firms are indicated to reveal the relationship between working capital components and corporate performance. For this reason; SPSS is benefited to run and interpret the outcome. The variables as ROA, RCP, ICP, PDP, CCC, FS, SG, DR and CR are used for Descriptive Statistics, Correlation and Regression Analyses. To this end; four regression models are shown and the details of the models are discussed.

3.10. Descriptive Statistics

Table 3 presents below the descriptive statistics including minimum, maximum, mean, and standard deviation values.

Table 3: Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	55	-4,542	,179	-,06905	,623259
RCP	55	2,121	191,682	53,45183	48,600117
ICP	55	,0574	3230,8972	183,568978	500,0508945
PDP	55	2,8893	247,7989	85,983816	50,0220828
CCC	55	-112,9919	3326,7756	150,893871	536,9406910
FS	55	18,49	22,48	20,6155	1,26598
SG	55	-,7868	1,6568	,151055	,3145635
DR	55	,0599	,9804	,610171	,1959827
CR	55	,4550	12,3812	1,379980	1,5860780

For a total of 55 observations in the period of study from 2010 to 2014, the analysis has been summarized as in the table above.

As seen from the analysis of the results; it is found that ROA has a mean value of -0,069 with standard deviation of 0,623.

As regards to time spend to collect cash from customers, it takes a mean time of 53,45 days. The minimum RCP value is 2,12 days and the maximum is 191,68 days, at standard deviation of 48,60 days.

The mean number of days in which a firm converts inventory into a sale is 183,57 days with a standard deviation of 500,05.

The average time spend to pay to the suppliers of the firm is 85,98 days with a standard deviation of 50,02 days. The minimum period to pay is 2,89 days while the maximum period as 247,79 days.

CCC has a standard deviation at 536,94 indicating a wide variation in working capital management among the trading firms. At the same time it has the minimum value as -112,99 days and the maximum one as 3326,78 days. The average value of CCC is 150,89 days meaning that the firm spends about 5 months to get the cash.

On control variables; the mean of SG is 0,151 at a standard deviation of 0,315 while the minimum value of -0,786 and maximum value of 1,65.

The analysis has an average value as 20,62 for the size of the firms while the standard deviation is 1,27. The minimum FS value is 18,49 and the maximum one is 22,48.

The average DR of the selected companies is 0,61 with a standard deviation about 0,196 while the minimum mentioned value is 0,059 and the maximum one as 0,98.

Trading companies have an average CR as 1,38 while the standard deviation, maximum and minimum values are 1,58, 12,38 and 0,45 respectively.

3.11. Correlation Analysis

Correlation of all variables is presented in the table below which is computed based on the financial statements of 11 firms for the period of 2010-2014. It shows how ROA is associated with RCP, ICP, PDP, CCC, FS, SG, DR and CR.

Table 4: Correlations

	ROA	RCP	ICP	PDP	CCC	FS	SG	DR	CR
ROA	1	-.246	-.183	.219	-.213	.262	-.137	.367**	-.927**
RCP		1	.359**	-.077	.433**	-.562**	-.234	-.375**	.477**
ICP			1	-.310*	.993**	-.407**	-.400**	-.346**	.253
PDP				1	-.388**	.165	.022	.598**	-.245
CCC					1	-.445**	-.395**	-.411**	.302*
FS						1	-.008	.219	-.327*
SG							1	.063	.045
DR								1	-.517**
CR									1

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

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

The results indicate that ROA does not have significant and stronger correlations with working capital components. Additionally; the relations between ROA and RCP, ICP, CCC are negative correlated while PDP and ROA have a positive correlation, as estimated. Because significant relations are seen between the independent variables; regression models are to be formed by estimating the multiple linear relations among them.

3.12. Regression Analysis

Regression models mentioned above are used in the following section for data analysis in order to examine the relationship among ROA and working capital components. Therefore, this part highlights the dimension of working capital management's effect on the companies' performances.

3.12.1. Regression Analysis for Receivable Collection Period and Profitability

The regression between RCP and ROA is analyzed here by using Equation 1 in the analysis.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.319	.529		-.604	.549		
	RCP	.004	.001	.275	4.993	.000	.515	1.943
	FS	.042	.024	.085	1.761	.085	.662	1.511
	SG	-.033	.083	-.017	-.396	.694	.887	1.127
	DR	-.346	.149	-.109	-2.324	.024	.709	1.410
	CR	-.427	.020	-1.086	-21.572	.000	.615	1.626

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.961[a]	.924	.916	.180771	2.017

a. Predictors: (Constant), CR, SG, FS, DR, RCP

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.375	5	3.875	118.581	.000[b]
	Residual	1.601	49	.033		
	Total	20.976	54			

a. Dependent Variable: ROA
b. Predictors: (Constant), CR, SG, FS, DR, RCP

According to the tables above; Adjusted R Square value as 0,916 and F value as 118,581 are quite sufficient for significance and validity of Model 1. Besides t test indicates that the coefficients of FS and SG are insignificant while the others are significant.

The findings of this model also show that coefficient of account receivable is positive and is highly significant which means the increase or decrease in account receivable will significantly affect ROA. Hence; the significant relationship between RCP and ROA leads to acceptance of the alternative hypothesis.

3.12.2. Regression Analyses for Inventory Conversion Period and Profitability

The second equation is similar to the first model and ICP is used as the independent variable instead of RCP so as to find out the relationship between ICP and ROA.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.331	.598		2.225	.031		
	FS	-.025	.027	-.052	-.931	.357	.757	1.320
	SG	-.197	.107	-.099	-1.835	.073	.794	1.260
	DR	-.477	.186	-.150	-2.568	.013	.682	1.466
	CR	-.396	.023	-1.007	-17.177	.000	.678	1.475
	ICP	-5.153E-005	.000	-.041	-.672	.505	.615	1.626

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.941[a]	.886	.874	.221037	1.972

a. Predictors: (Constant), ICP, CR, SG, FS, DR

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.582	5	3.716	76.068	.000[b]
	Residual	2.394	49	.049		
	Total	20.976	54			

a. Dependent Variable: ROA

b. Predictors: (Constant), ICP, CR, SG, FS, DR

Referring to the tables above; Adjusted R Square value as 0,874 and F value as 76,068 are evaluated to be sufficient for significance and validity of Model 2 but t test indicates that the coefficients of FS, SG and ICP are insignificant while the others are significant. Furthermore; the findings of this model indicate that coefficient ICP is negative and is insignificant so the insignificant relationship between ICP and profitability causes the acceptance of the null hypothesis and rejection of the alternative hypothesis.

3.12.3. Regression Analyses for Payable Deferral Period and Profitability

In the same way, third regression equation applied to analyze the impact of PDP on the profitability.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.238	.526		2.354	.023		
	FS	-.021	.025	-.043	-.866	.391	.885	1.129
	SG	-.160	.094	-.081	-1.709	.094	.987	1.013
	DR	-.655	.214	-.206	-3.069	.003	.491	2.035
	CR	-.401	.023	-1.019	-17.735	.000	.671	1.490
	PDP	.001	.001	.102	1.720	.092	.633	1.579

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.944[a]	.891	.880	.215636	2.017

a. Predictors: (Constant), PDP, SG, FS, CR, DR

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.698	5	3.740	80.423	.000[b]
	Residual	2.278	49	.046		
	Total	20.976	54			

a. Dependent Variable: ROA

b. Predictors: (Constant), PDP, SG, FS, CR, DR

According to the tables; Adjusted R Square= 0,880 and F=80,423 values are sufficient for significance and validity of Model 3.

Besides t test indicates that the coefficients of FS, SG and PDP are insignificant; this insignificant relationship between PDP and profitability causes the acceptance of the null hypothesis.

3.12.4. Regression Analyses for Cash Conversion Cycle and Profitability

The regression between CCC and ROA is analyzed below by using Equation 4.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.292	.614		2.103	.041		
	FS	-.024	.028	-.048	-.855	.397	.729	1.371
	SG	-.188	.108	-.095	-1.735	.089	.783	1.278
	DR	-.475	.190	-.149	-2.498	.016	.656	1.524
	CR	-.396	.023	-1.007	-17.122	.000	.677	1.477
	CCC	-3.513E-005	.000	-.030	-.465	.644	.553	1.808

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.941[a]	.885	.874	.221563	1.968

a. Predictors: (Constant), CCC, CR, SG, FS, DR

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.571	5	3.714	75.660	.000[b]
	Residual	2.405	49	.049		
	Total	20.976	54			

a. Dependent Variable: ROA

b. Predictors: (Constant), CCC, CR, SG, FS, DR

Referring to the tables above; Adjusted R Square value as 0,874 and F value as 75,660 are evaluated to be sufficient for significance and validity of Model 4 but t test indicates that the coefficients of FS, SG and CCC are insignificant while the others are significant. Furthermore; the findings of this model indicate that coefficient CCC is negative and is insignificant so the insignificant relationship between CCC and profitability causes the acceptance of the null hypothesis and rejection of the alternative hypothesis.

All of the models indicate that variables are not multiple linear between themselves in respect of VIF values and autocorrelation is not included for Durbin-Watson test. Due to the analyses held; the first model is evaluated to be more suitable among the four ones hence the relationship between RCP and profitability is more significant.

The research findings analyzed and interpreted in this section are summarized below in the following table.

Table 5: Summarized Results

Independent Variable	Correlation with ROA	Relationship with ROA	Conclusion Decision
RCP	Negative	Significant	Accept the alternative and reject the null hypothesis
ICP	Negative	Insignificant	Accept the null hypothesis
PDP	Positive	Insignificant	Accept the null hypothesis
CCC	Negative	Insignificant	Accept the null hypothesis

The following section discusses the results summarized in the table above in detail. As seen from the table; RCP has a significant effect on ROA, the correlation between receivable collection period and return on assets is clearly negative. Besides; ICP, PDP, and CCC have insignificant impact on ROA. Regarding our hypothesis, according to our alternative hypothesis (H_1) we conclude that there is a significant relationship between RCP and ROA of the Turkish trading firms is one to be accepted; while the others (ICP, PDP, and CCC) reject alternative hypothesis.

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This research is conducted in order to determine the relationship between working capital management and corporate performance by taking a sample of 11 Turkish trading companies listed on ISE during the five years between 2010 and 2014. Correlation and regression methods on a panel data of 55 observations are used in the study.

An average cash conversion cycle value of 150 days for trading firms in Turkey is suggested to be very high. Firms should devise ways that enables them to reduce their CCC values. It has also been noticed that the receivable collection period of trading firms in Turkey is also a long cycle. As far as they could, credit manager should shorten the RCP to a possible limit. By speeding the inventory turnover rate, it is probable for firms to increase their profitability.

The results indicate that ROA does not have significant and stronger correlation relations with working capital components. Additionally; the relationships between ROA and RCP, ICP, CCC are negative correlated while PDP and ROA have a positive correlation, as they are estimated before.

The findings of the correlations among control variables as debt ratio and current ratio have significant relations with ROA.

Negative correlation relationship between corporate profitability and CCC is quite consistent similar to the researches like the mentioned ones in the study. Therefore, business managers are suggested to create value for their owners by decreasing CCC which leads to an increase in profitability. The best way to enhance profitability is by employing an efficient management of working capital.

The findings of the first regression model show that coefficient of RCP is positive and is highly significant which means the increase or decrease in account receivable to have a significant impact on ROA. Furthermore; the findings of the following three models indicate that coefficients of ICP, PDP and CCC are insignificant so the insignificant relations between ICP, PDP, CCC and profitability cause the acceptance of the null hypotheses and rejection of the alternative hypotheses. According to the analyses held;

the first model is evaluated to be more suitable among the others, hence; the relationship between RCP and profitability is more significant.

Besides; debt ratio and current ratio have significant relations with return on assets in the regression models.

For the further studies related about this issue; it may be reasonable to extend the sample by including the other trading companies also SMEs in the mentioned index or else.

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APPENDICES

Appendix 1 Correlation

		ROA	RCP	ICP	PDP	CCC	FS	SG	DR	CR
ROA	Pearson Correlation	1	-.246	-.183	.219	-.213	.262	-.137	.367**	-.927**
	Sig. (2-tailed)		.070	.180	.108	.118	.053	.318	.006	.000
	N	55	55	55	55	55	55	55	55	55
RCP	Pearson Correlation	-.246	1	.359**	-.077	.433**	-.562**	-.234	-.375**	.477**
	Sig. (2-tailed)	.070		.007	.574	.001	.000	.086	.005	.000
	N	55	55	55	55	55	55	55	55	55
ICP	Pearson Correlation	-.183	.359**	1	-.310*	.993**	-.407**	-.400**	-.346**	.253
	Sig. (2-tailed)	.180	.007		.021	.000	.002	.003	.010	.062
	N	55	55	55	55	55	55	55	55	55
PDP	Pearson Correlation	.219	-.077	-.310*	1	-.388**	.165	.022	.598**	-.245
	Sig. (2-tailed)	.108	.574	.021		.003	.228	.872	.000	.072
	N	55	55	55	55	55	55	55	55	55
CCC	Pearson Correlation	-.213	.433**	.993**	-.388**	1	-.445**	-.395**	-.411**	.302*
	Sig. (2-tailed)	.118	.001	.000	.003		.001	.003	.002	.025
	N	55	55	55	55	55	55	55	55	55
FS	Pearson Correlation	.262	-.562**	-.407**	.165	-.445**	1	-.008	.219	-.327*
	Sig. (2-tailed)	.053	.000	.002	.228	.001		.953	.108	.015
	N	55	55	55	55	55	55	55	55	55
SG	Pearson Correlation	-.137	-.234	-.400**	.022	-.395**	-.008	1	.063	.045
	Sig. (2-tailed)	.318	.086	.003	.872	.003	.953		.647	.745
	N	55	55	55	55	55	55	55	55	55
DR	Pearson Correlation	.367**	-.375**	-.346**	.598**	-.411**	.219	.063	1	-.517**
	Sig. (2-tailed)	.006	.005	.010	.000	.002	.108	.647		.000
	N	55	55	55	55	55	55	55	55	55
CR	Pearson Correlation	-.927**	.477**	.253	-.245	.302*	-.327*	.045	-.517**	1
	Sig. (2-tailed)	.000	.000	.062	.072	.025	.015	.745	.000	
	N	55	55	55	55	55	55	55	55	55

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

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

CURRICULUM VITAE

Mohamed Mohamud MAKARAN was born in Hudur-Somalia in 1981. He graduated from Sheikh Mohamed Mo'alim Secondary School in Baladwein-Somalia and received Bachelor of Science in Accounting from Somali Institute of Management and Administration Development (SIMAD) in Mogadishu-Somalia. He is currently a Master student of Sakarya University in the field of Accounting and Finance.