

THE IMPACT OF WORKING CAPITAL MANAGEMENT ON FIRMS
PERFORMANCE IN THE MANUFACTURING SECTORS OF PAKISTAN

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*Dedicated to my beloved mother Ghulam Bi for her devotion to empower women
through education*

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ABSTRACT

The working capital management has an important role for a firm's success or failure because of its effect on firm's performance and liquidity. This study is based on secondary data collected from 294 manufacturing firms listed on Karachi Stock Exchange Market for the period 2001-2012, to investigate the relationship between working capital management components and performance of the firms by using panel data analysis and generalized method of moments (GMM). The study applied analysis of variance (ANOVA) test in order to explore any differences across sectors in Pakistan. The study used four firms' performance measures as dependent variables which include return on assets (ROA), net profitability margin (NPM), firms growth (FG) and Tobin Q. The working capital measures include cash conversion cycle (CCC), net trade cycle (NTC), current ratio (CR) and current assets to total assets ratio (CATAR). The study also used control variables such as size of the firm (LOS), firms age (FAGE), financial debt ratio (FDR), inflation (INF) and gross domestic product (GDP). The results revealed that CCC, CATAR, LOS, FAGE, FDR, INF and GDP are positive significant determinants of firm's performance in Pakistan. In contrast, NTC is negative significant determinant of firm's performance. Moreover, the results of ANOVA depicted that there is a significant difference among three working capital measures (CCC, NTC and CATAR) and firm's performance on sectoral basis. In conclusion, the study proved that working capital measures have significant role on firm's performance and there is a significant difference among their effects on sectoral basis, as an efficient working capital management leads to success in the performance of manufacturing sectors of Pakistan.

ABSTRAK

Pengurusan modal kerja mempunyai peranan penting untuk kejayaan atau kegagalan firma kerana kesannya ke atas prestasi dan kecairan firma. Kajian ini berdasarkan data sekunder yang dikumpul daripada 294 syarikat pembuatan yang tersenarai di Pasaran Bursa Saham Karachi bagi tempoh 2001-2012, untuk mengkaji hubungan antara komponen pengurusan modal kerja dan prestasi firma dengan menggunakan analisis data panel dan kaedah momen teritlak (GMM). Kajian ini menggunakan ujian analisis varians (ANOVA) untuk meneroka sebarang perbezaan di kalangan sektor-sektor di Pakistan. Kajian ini menggunakan empat pengukuran prestasi sebagai pembolehubah bersandar yang merangkumi pulangan ke atas aset (ROA), margin keuntungan bersih (NPM), pertumbuhan firma (FG) dan *Tobin Q*. Pengukuran modal kerja termasuk kitaran penukaran tunai (CCC), kitaran bersih perdagangan (NTC), nisbah semasa (CR) dan aset semasa kepada jumlah nisbah aset (CATAR). Kajian ini juga menggunakan pembolehubah kawalan seperti saiz firma (LOS), hayat firma (FAGE), nisbah hutang kewangan (FDR), inflasi (INF) dan keluaran dalam negara kasar (KDNK). Keputusan menunjukkan bahawa CCC, CATAR, LOS, FAGE, FDR, INF dan KDNK merupakan penentu positif penting bagi prestasi firma di Pakistan. Sebaliknya, NTC ialah penentu negatif yang signifikan bagi prestasi firma. Selain itu, keputusan ANOVA menunjukkan bahawa terdapat perbezaan yang signifikan di antara tiga pengukuran modal kerja (CCC, NTC dan CATAR) dan prestasi firma berasaskan sektor. Kesimpulannya, kajian membuktikan bahawa pengukuran modal kerja mempunyai peranan yang signifikan ke atas prestasi firma dan terdapat perbezaan signifikan antara kesan mereka berasaskan sektor, kerana pengurusan modal kerja yang efisien membawa kepada kejayaan dalam prestasi sektor pembuatan di Pakistan.

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LIST OF ABBREVIATIONS

ACPID	-	Average collection period in days
ADB	-	Asian Development Bank
ADF	-	Augmented Dickey -Fuller
ANOVA	-	Analysis of variance
AP	-	Number of days accounts payables
APPID	-	Average payment period in days
AR	-	Number of days accounts receivables
CATAR	-	Current assets to total assets ratio
CCC	-	Cash conversion cycle
CFO	-	Chief financial officer
CPI	-	Consumer price Index
CR	-	Current ratio
CRS	-	Congressional research service report
EU	-	European union
EBIT	-	Earnings before interest and tax
FAGE	-	Firms age
FDI	-	Foreign direct investment
FDR	-	Financial debt ratio
FEM	-	Fixed effect model
FG	-	Firms growth
FL	-	Financial leverage
FMCG	-	Fast moving consumer goods
FY	-	Financial year
GDP	-	Gross domestic product
GDPGR	-	Gross domestic product growth
GOP	-	Gross operating profitability
GMM	-	Generalized method of moments

GNP	-	Gross National Product
GPM	-	Gross Profitability margin
IMF	-	International Monetary Fund
INF	-	Inflation
INV	-	Number of days inventory
ITID	-	Inventory turnover in days
ITO	-	Inventory turnover
ITP	-	Inventory turnover period
ITR	-	Inventory turnover ratio
KSE	-	Karachi stock exchange
LEV	-	Leverage
LLC	-	Levin- Lin- Chu unit root test
LM	-	Langrage multiplier
LOS	-	Size of the firm
NPM	-	Net profitability margin
NSE	-	Nairobi Stock exchange
NSE	-	Nigerian stock exchange
NTC	-	Net trade cycle
NYSE	-	New York stock exchange
NWCL	-	Net working capital level
OCF	-	Operating cash flows
OI	-	Operating income
OLS	-	Ordinary least square
PKR	-	Pakistan rupees
PBITM	-	Profit before interest and tax margin
QAR	-	Quick acid ratio
REM	-	Random effect model
ROA	-	Return on assets
ROE	-	Return on equity
ROIC	-	Return on invested capital
ROS	-	Return on sales
RCP	-	Receivables collection period
ROCE	-	Return on capital employed
ROI	-	Return on investments

ROTA	-	Return on total assets
SBP	-	State Bank of Pakistan
SG	-	Sales Growth
SME	-	Small medium enterprises
UK	-	United Kingdom
USA	-	United States of America
Tobin's Q_{it}	-	Market value of firm i for time period t
VIF	-	Variance inflation factor
VSM	-	Vietnam stock market
WCM	-	Working Capital Management

CHAPTER 1

INTRODUCTION

1.1 General Overview

Firm's performance is a vital measure for the management as it depicts the ability of the firm to manage the economic resources in order to develop the competitive advantage (Hansen and Mowen, 2011). Naser and Mokhtar (2004) argued that firms imitating high financial performance portray that the management of the firm are using the resources effectively and efficiently and is often pronounced in terms of growth of the sales, turnover or stock prices. The financial managers consider the financial performance of the firms as an essential component of the corporate strategy as it enhances the shareholder's value (Deloof, 2003), and in order to maximize the value, firms need to maintain an optimal level of the working capital (Afza and Nazir, 2007). According to Ejelly (2004) firm's performance is of paramount significance for the financial managers as each firm should generate fair return in order to justify its existence. Deloof (2003) claimed that the requirement of the firms to exhibit reasonable financial performance calls for effective and efficient management of the working capital.

The corporate finance decisions relate to three fields; capital budgeting, capital structure and working capital management. Capital budgeting and capital structure are part of the financial management which primarily focuses on managing the long term investment and returns, whereas working capital management largely

focuses on short term financing and short term investment decisions (Sharma and Kumar, 2011).

Working capital is the money needed to finance the daily revenue generating activities of the firm. The investment firms made in the short-term assets, and the resources used with maturities under one year, represents the main share of items on the firm's balance sheet (Garcia-Teruel and Martinez-Solano, 2007). Hence, traditionally efficiency of working capital management is based on the principle of speeding up collections as quickly as possible and slowing down the disbursements as slowly as possible (Nobanee *et al.*, 2011) which will enable to minimize the risk of having insufficient funds to pay the short term liabilities (i.e current liabilities). However, holding too much liquidity will work to reduce the risk at the cost of decreasing the firm's performance. On the other hand, investing less in working capital will increase the profits as well as the associated risk. This trade-off between profitability and risk is the key to the working capital management (Dash and Ravipati, 2009), which aims at administering a balance between liquidity and profitability while conducting the day-to-day operations of the business (Falope and Ajilore, 2009). Thus, efficient working capital management as argued by Ejelly (2004) involves the planning and controlling of the current assets and the current liabilities in such a manner that eliminates the risk of inability to meet short term obligations while avoiding excessive investments in these assets.

Although working capital management is the concern of all firms, given the vulnerability of firms to working capital fluctuations, it is the emerging market that could address this issue more seriously as they cannot afford to starve for cash (Padachi, 2006). Likewise, since liquidity burden is among the most pronounced obstacles faced by the emerging market firms, an efficient working capital management can be argued to be more critical for them. There is an increasing research interest in the relationship between working capital management and profitability, productivity and market performance (e.g. Wang, 2002; Deloof, 2003; Garcia-Teruel and Martinez-Solano, 2007; Raheman and Nasr, 2007). In a way this is a reflection of importance of working capital management to all economies, particularly in an emerging market (Grablowsky, 1984; Peel and Wilson, 1996;

Howorth and Westhead, 2003). The efficient working capital management leads to high profitability which enables the firms to sustain in the market (Padachi, 2006). Similarly, the efficient working capital also provides extra discretion to firms to enhance their productivity otherwise the productivity may cause bad debts and harm the net profitability of the firms. Moreover, the working capital management is highly associated with firm's market value because in most of the researches the firm's productivity and profitability are the major determinants of firm's market value.

1.2 Background of the Study

Working capital management is considered to be the lifeblood and is a nerve centre for any business activity as it provides an inherent strength to meet the daily needs of the business in order to face the financial crisis (Dixit, 2015). Working capital management has gained augmented significance in the current challenging economic era as due to the environmental pressure and restricted external sources. (Li *et al.*, 2014). Working capital management can act as competitive edge to the businesses (Valipour and Moradi, 2012). The management of the working capital plays a significant role which the firm has to consider keeping a minimum of the working capital to settle their current liabilities (Uremadu *et al.*, 2012). Hence, the current assets and current liabilities is essential element of the working capital and should be carefully appraised as management of the working capital plays a vital role in the firm's profitability, risk and its value (Almazari, 2013).

Working capital management significantly influences the health of the business (Sagan, 1955). The inquisitive in the working capital management has been developed for the last two decades (Lyroudi and Lazaridis, 1993). The financial managers of the firm spent ample time as how best they can use the working capital (Rao, 1989). This involves the decisions about the proportion and the blend of the current assets and means of financing them. The scanty of funds in the working capital and over investment in the working capital has resulted in failure of many

businesses and in some instances has stunted its growth (Gul *et al.*, 2013). The efficiency of top management mainly relies on their ability to provide a sound working capital management (Kolapo *et al.*, 2015). Hence, efficient working capital management can result in the success of the firm, while ineffectual management of working capital may steer to insolvency (Chen *et al.*, 2005), and will eventually lead to bankruptcy (Al-Mwalla, 2012). The main reason for the dawdling growth of the firm is due to shortage or mismanagement of working capital (Siddarth *et al.*, 1994) and due to poor planning firms often faces shortage or excess of the working capital (Agarwal, 1977). At times, the amount of money which is tousel in the working capital is expensive as it either earns zero or low return (Kim, Mauser, 1998). The firm's financial manager ability to efficiently manage the receivables, inventories and payables determine the success or failure of the businesses (Filbeck and Krueger, 2005). Hence, the main task of the managers is to identify enviable strategy of the working capital which maximizes the shareholder's wealth and leads to the new challenges which the business entity faces.

Working capital management plays a crucial role in the growth and profitability of the firms which is interrelated with the notion of liquidity. Subsequently to this squabble, a few of the recent researches have depicted that by reducing the working capital measures, the firm's profitability can be improved (Shin and Soenen, 1998; Deloof, 2001; Padachi, 2006; Garcia – Teruel and Martinez – Solano, 2007) and to increase the market value of the firms, the general strategy is to have an efficient management of the working capital (Deloof, 2003; Howord and Westhead, 2003; Afza and Nazir, 2007). Increased working capital is not liquidity improvement while real liquidity improvement depends on the firm's short term financial performance (i.e Profitability) which is not only affected by the efficiency of the working capital, but it also largely influences the long term financial performance (i.e Firm's value maximization). Continuous effort should be made in order to improve the working capital resulting in greater efficiency and thereby improving the customer satisfaction (Ganesan, 2007).

The researchers believed that efficient management of the working capital is indispensable for the firms during booming economic era (Macime, 2008), and

hence the firms can manage expediently so as to sustain the position competitive while the others emphasized that to improve the working capital management it is vital that firms should undergo the effects of the economic turmoil (Korankye and Adarquah, 2013). In financial literature, the significance of the working capital management is too old. Firms which fail to pay due attention to working capital management cannot sustain for longer period of time (Dong and Su, 2010; Niresh, 2012). Hence, working capital management is imperative for the firms because of its profitability, growth and consequently the firm's value (Smith, 1980). Therefore the task of the managers is to ensure that a trade-off between liquidity, profitability and growth should be maintained in order to maximize the firm's value (Padachi, 2006).

1.3 Background of the Problem

Working capital is regarded as life philanthropic vigour for any economic activity therefore its management is categorized among the most important functions of corporate management. Every organization irrespective of their size and nature of business requires sufficient amount of working capital. (Mukhopadhyay, 2004). The management of such resources is considered as the most critical factor for maintaining liquidity, solvency, continued existence and profitability of the business (Siddique and Khan. 2009). Furthermore, Shin and Soenen (1998) and Deloof (2003) also emphasized that efficient management of working capital is imperative to create value for the shareholders.

Additionally, with the initiative in respect of liberalization, privatization and globalization taken by the Government of Pakistan, the entire gamut of the Pakistani economy has changed significantly. The rapid shrinking of time and distance across the global, fastest communication, speedier transportation, growing financial flows and rapid technological changes have made the Pakistani businesses global. For smooth running of the business, the firm should have requisite degree of liquidity. Excessive liquidity implies accumulation of idle funds which earn nothing for the

firm whereas inadequate liquidity hampers the firm's profitability, growth and also causes interruption in the business operations. An efficient liquidity management can do much to ensure the success of the firm in the highly competitive environment.

Manufacturing sector is considered as backbone for the economy and the key function is to produce goods (Ejelly, 2004), and this function mainly relies on working capital management (Raheman *et al.*, 2010). Working capital management efficient is important particularly for the manufacturing firms as it produces half of its total assets (Van Horne and Wachowicz, 2000; Nejad *et al.*, 2013). The manufacturing sectors had always played an imperative role in development of the Pakistan's economy (Riaz *et al.*, 2014). It accounts for 60% of the overall credit of the private sector, and has gained augmented attention in various five year plans for the economic growth of Pakistan. More than 75% of the exports of the Pakistan are based on the manufacturing goods and it is vital that the manufacturing sectors should be strengthened (Nazir and Afza, 2009). The manufacturing sectors of Pakistan are also vital in terms of the tax revenue generation; the number of jobs created by this sector and provides employment. Regarding the collection of the taxes, the contribution of the manufacturing sectors of Pakistan account for 63% of the total taxes, whereas the contribution of the service sector accounts for only 26% of the taxes and the agriculture sector has only contributed 1% of the total tax receipts during the financial year 2009- 2010 (Raheman *et al.*, 2010). Moreover, the significance of the manufacturing sectors has also increased due to the intemperate poverty, an increase in the population and the import bill of the manufacturing goods. However, the growth of the Pakistan's manufacturing sector has remained fairly stagnant in the recent past. Pakistan, as one of the developing country has a real gross domestic product of 3.8% in the year 2011 -12 which is the lowest compared to all other developing countries (Economic survey of Pakistan, 2001 -2012). Even during the recent economic growth spurts in Pakistan, the manufacturing sector failed to generate employment. The decline in the firm's performance of the manufacturing sector is due to the low level of productivity and stunted firms growth. The other factors include the working capital issues, credit market failures, shortage and high cost of energy, macroeconomic instability, infrastructural constraints and inadequate

business management and strategy which has inhibited the growth of the firms in the Pakistani manufacturing sectors. (World Economic Outlook, IMF, 2015).

Working capital management has been approached in assorted ways by various researchers in many countries around the globe, but in the developing countries it has mainly remained untapped. A substantial part of the literature conducted around the globe examined the association of working capital management and profitability at the firm level, but there are no reported studies where the performance of various working capital management measures on firm's performance is studied in detail and compared at sectoral level for the manufacturing firms. For the economic development of any country, sectors are considered as engine of economic growth as they provide a sound and healthy economic base which is essential for the financial well-being of the firms. Since each sector is subject to different levels of competitive dynamics, growth and significance, hence high level of characteristics of sectors may differently affect the lower level characteristics of the firms which determine their working capital management.

Literature reveals that numerous researches were accomplished around the globe to determine the association of working capital management and profitability. Most of the researches conducted so far mainly focused only on specific firms in the developed and the developing countries (Moss and Stine, 1993; Jose *et al.*, 1996; Shin and Soenen, 1998; Ganesan, 2007; García-Teruel and Martínez-Solano, 2007; Ching *et al.*, 2011; Gill *et al.*, 2010; Ahmadi *et al.*, 2012; Farzinfar and Arani, 2012; Soekhoe, 2012; Marttonen *et al.*, 2013; Ruichao Lu, 2013; Tufail *et al.*, 2013; Ademola, 2014; Enqvist *et al.*, 2014; Aktas *et al.*, 2015; Maswadeh, 2015). However, far too little attention has been paid to sectors level factors which have the tendency to affect the firm's working capital management decisions. The firms that operate in the sectors have different business environment and carry different levels of growth, risk and competitiveness. There is a strong believe that the sector specific response to various manufacturing factors can be different. Since the sector vary in terms of their customer basis, products and market orientation, therefore it is imperative that a comprehensive study should be carried out to analyse the relationship of working capital management on the firm's performance at the firm and sectoral level as this

aspect has remained untapped particularly in the developing economy like Pakistan (Khan *et al.*, 2011). In conjunction with the above understanding, the present study investigates the effect of sectors on working capital management and firm's performance of the Pakistan listed manufacturing firms across sectors.

1.4 Problem Statement

Working capital management is a significant area of financial management, and the administration of working capital may have an important impact on the profitability and liquidity of the firm (Lotfinia, *et al.*, 2012). Therefore, the firm's management has to evaluate the trade-off between profitability and risk before deciding the level of investments in the current assets (Dong and Su, 2010). The problem of working capital management arises when the firm's manager fail to manage the short term resources (current assets) and the short term liabilities (current liabilities) and interrelationship that lies between them. Almost all businesses irrespective of their size and type of business needs adequate amount of working capital for its business operations (Nzioki *et al.*, 2013; Onodje, 2014). Hence, an approach to manage the working capital efficiently has paramount importance in the firm's financial performance (Alagathurai, A., 2013).

Financial performance is a way to satisfy investors (Chakravarthy, 1986) and can be represented by profitability, growth and market value (Cho and Pucik, 2005). These three aspects complement each other. Profitability measures the firm's ability to generate returns (Glick *et al.*, 2005). Growth demonstrates the firm's past ability to increase its size (Whetten, 1987). Increasing size even at the same profitability level will increase its absolute profit and cash generation. Market value represents the external assessment and expectation of the firm's future performance. An ideal business needs sufficient resources to keep it going and ensures that such resources are maximally utilized to enhance its profitability, growth and overall performance (Anand and Gupta, 2002; Deloof, 2003; Padachi, 2006; Ganesan, 2007; Luo *et al.*, 2009; Mohamad and Saad, 2010). Most of these and other researchers identified

significant association between working capital management and firm's performance (Emery, Finnerty and Stowe, 2004). This however makes the manager not to effectively manage the various mixes of working capital components which are available to them, and as such the firms may either be over capitalized or undercapitalized or worst still liquidate. Uremadu *et al.*, (2012) found that large number of business failures in the past have been blamed on the inability of the financial manager to plan and control the working capital of their respective firms. These reported inadequacies among the financial managers which are still practiced today in many firms in the form of high bad debts, high inventory costs etc., can adversely affect their performance .

To understand the role and the drivers for working capital management and to attain the high levels of working capital, firms can minimize the risk and prepare for uncertainty which consequently enhances the firm's performance (Harris, 2005). Obtaining optimum trade-off between liquidity and profitability is an ever existing problem for today's Chief Financial executives (CFO). To find an optimal level in the working capital, the management has to achieve a balance between the risk and efficiency (Filbeck and Kruger, 2005). They have to understand the trade-off that exists between liquidity and profitability. The working capital is vital factor in maintaining the existence, liquidity, solvency and profitability of a firm (Akoto *et al.*, 2013).

The management of the working capital can increase the value for the shareholders because taking care of the liquidity can increase the firm's profitability. Tied up funds in the working capital can be looked as hidden reserves which can optimally be used for growth strategies like capital expansion. The cash flows locked within stocks or receivables can be used to increase the firm's profit and value (Appuhami, 2008). Although profitability may be considered the governing factor for the business, nevertheless the management of working capital can effectively bring to a halt or to its ultimate downfall, what might otherwise be a successful and profitable firm. The current squeeze on cash and credit is in general threatening the survival of many businesses all over the world and is considered as a source of the firm's working assets and liabilities. The aftermath of this credit crunch is drastic

reduction in the production and sales, leading to massive retrenchment of workers and liquidation of many businesses. Unfortunately, not every firm is able to find external financing easily. Where it is available the cost of borrowing may be expensive, resulting in poorer bottom line. In view of this liquidity management (working capital management) has become one of the most important issues in the firms where many executives strive to identify the basic working capital drivers and the appropriate level of the working capital, because those firms that believes in lessening its level of cash by holding too many inventories or granting too much credit imperils its liquidity (Kamath, 1989; Moss and Stine, 1993; Dierks and Patel, 1997).

Profitability of the firm is on the verge of higher side but at the same time the growth may also be influenced badly. The concept of firm's performance is associated with profitable, growth and market valuation. The fact that profitability and growth are relevant motives for the existence of a firm and must be included in an attempt to measure the firm's performance (Santos and Brito, 2012). The firm's growth also attracts the investors because long term investors do prefer the wealth maximization concept rather than the profitability, and is designed to indicate the firm's ability to maintain its market share when the economy and industry are in period of expansion. and thereby shows the firm's capability to increase its size (Bacidore *et al.*, 1997). Achim (2010) stated that the increase of a firm would be given by the rate at which it can achieve its growth. The growth prospect of the firm with regard to the working capital management has widely been ignored around the globe and more particularly remained untapped in a developing economy like Pakistan. As mentioned in the previous paragraph, working capital management provides the firm timely benefits but in the long run, it may burst into firm's failure. For the purpose of more conclusive evidences, there is a need to test growth measure with the working capital measures. At the same time the manager's performance evaluation measures will also be changed and the management in Pakistan need to consider the growth measures while managing their working capital in order to cope the future failures or adverse results.

In addition to this, the equity holders are more concerned with share performance in the stock market. The capital gain and dividend taxes are also major cause of concern. The investors choices also matters because the investors falling in different tax brackets may have different choices. The profitability of the firm may not be the primary cause of concern for some investors because they may have disadvantages as they prefer to share prices more than any other measures of the working capital. Secondly, the firm's share prices also show the market strength of the firm and makes borrowing and equity financing easier. This makes the share prices more cause of concern from the stockholder's point of view. The study is also needed to evaluate the determinants of the share prices related to the working capital measures. There may be some factors influencing profitability or growth measures but they have adverse impacts on the share prices.

The firms need to optimize and manage their working capital in a way that does not compromise future sales and profits. Most customers appreciate a longer payment period to improve their own working capital or to check product quality. By minimizing inventory levels, a company might not be able to take advantage of sudden upturn in their demand and miss out on sales. Also by deferring payments the firm can incur heavy financing rates on their credit or miss out on discounts given for prompt payment. These metrics and drivers are very industry specific, as in some industries cycle times are very fast (e.g. retail) whereas in some industries, such as manufacturing, the cycle times can be much longer, thus binding more capital into operations. The firms which operate in the sectors have different business environment and carry different levels of growth, risk and competitiveness. There is a strong believe that the sector specific response to various manufacturing factors can be different, and far too little attention has been paid to the sectors level factors which have the tendency to affect the firm's working capital management decisions. Therefore, it is imperative that the firms should analyse the relationship of working capital management on the firm's performance at the firm and sectoral level as this aspect has largely remained untapped in the literature and particularly in the developing economy like Pakistan. (Raheman *et al.*, 2010).

Lack of empirical evidence on the working capital management and its impact on the firm performance in case of manufacturing sectors of Pakistan is main motivating force to study the subject in more detail. Therefore, the researcher believed that the problem is almost untouched and there is a knowledge gap in this area and lack of proper research study gives a chance for Pakistani firm's managers to have limited awareness in relation to the working capital management to increase the firm's performance. All these constitute the problem of the investigation hence the need to study the impact of working capital management on the performance of manufacturing sectors of Pakistan.

1.5 Research Questions

This study investigates the impact of working capital management measures on the firm's performance of listed manufacturing sectors of Pakistan. Specifically to answer the following questions:

1. Do working capital management measures have significant impact on return on assets?
2. Do working capital management measures have significant impact on net profitability margin?
3. Do working capital management measures have significant impact on the firm's growth?
4. Do working capital management measures have significant impact on the firm's market value?
5. Is there any difference among the impact of working capital measures on the firm's performance on sectoral basis in the Pakistani manufacturing sectors?

1.6 Research Objectives

The study aims to highlight the impact of working capital management measures on the firm's performance in the manufacturing sectors of Pakistan. Therefore, this empirical study underlines the following key objectives:

1. To assess the impact of working capital management measures on return on assets.
2. To assess the impact of working capital management measures on net profitability margin.
3. To assess the impact of working capital management measures on firm's growth.
4. To assess the impact of working capital management measures on the firm's market value.
5. To assess any difference among the impact of working capital measures on the firm's performance on sectoral basis in the Pakistani manufacturing sectors.

1.7 Significance of the Study

A series of the empirical literature largely focused on long term financing and long term investments in liquidity, and therefore working capital management are of paramount importance in the present economic era (Abuzayed, 2012; Zawaira and Mutenheri, 2014). As trade off theory emphasizes that the firm should strike a balance between the liquidity and the profitability; therefore it has become imperative and the most challenging decision, which the firm's manager has to take to conduct the day to day operations of the firm (García-Teruel and Martínez-Solano, 2007).

Keeping in mind the importance of liquidity management of the corporate sector, the present study has been conducted. It is fact that profitability, growth and firm's value are the most important factors that are major cause of concern for the management, but their roots need to be identified. Working capital is one of the factors that may hurt all the three performance measures of the firm. In recent years, many firms are subject to lack of liquidity (Ahmadi *et al.*, 2012), and the researcher believes that although with reforms in the working capital management, all improvement conditions are not provided but it could be effective and hence there is a dire need to study the relationship of working capital management on firm's performance of Pakistani manufacturing firms.

The research is also divided into different segments regarding working capital management. The consensus among researchers seems to be very rare even at one determinants of firm's performance. Secondly, the researcher is tempted to build consensus on different measures of the working capital and their impact on the firm's performance which will assist to resolve the puzzle regarding working capital management on firm's performance. Most of the researches conducted so far mainly focused only on specific firms or industry in the developed countries (Moss and Stine, 1993; Jose *et al.*, 1996; Shin and Soenen, 1998; Ganesan, 2007; García-Teruel and Martínez-Solano, 2007; Ching *et al.*, 2011; Gill *et al.*, 2010; Shaskia, 2012; Marttonen *et al.*, 2013; Ruichao Lu, 2013; Enqvist *et al.*, 2014; Aktas *et al.*, 2015),

and this research is devoted to the developing economy like Pakistan by considering four different measures of the firm's performance (return on assets, net profitability margin, firm's growth and firm's market value), and the study is expected to provide conclusive results regarding association between working capital measures and firm's performance. It is very imperative to use performance measure at the same time which makes the stockholders aware of the facts of working capital measurements in Pakistan.

The researcher believed that developing country like Pakistan which is exposed to so many macroeconomic challenges may have significant and sensitive association between working capital measures and firm's performance. It is evident that macroeconomic factors caused so many defaults like banking failure, bad debts, poor firm's performance and defaults risk with respect to long term financial management. The study explored the association between macroeconomic variables and firm's performance as controlled by the working capital measures. The study constructs the association between working capital measures and firm's performance which is controlled by firm's specific and macroeconomic variables. The study used the most sensitive macroeconomic variables (inflation and gross domestic product) which depict the significant association between working capital management and macroeconomic variables. This provided significant contribution to the literature and conclusive evidences for the stakeholders.

In the recent years, the issue of inflation has remained the main concern among other economic problems in Pakistan. Increase in general price level is also a consequence of government borrowing from State Bank of Pakistan (SBP) to finance its expenditures. The expansionary monetary policy is supposed to give addition in high inflation rate in the economy. Increase in the demand of the imports also contributing towards inflation to rise. In this situation, exchange rate depreciation in the economy of Pakistan is also exerting pressure on inflation upward (Khan *et al.*, 2014). Inflation affects the working capital management and policy. It plays out on both the balance sheet and the income statement of all businesses. Anticipating the future effects of inflation can work to the advantage of the financial managers. Manufacturing sectors are considered as an engine of the economy. Inflation in the

economy of Pakistan is harmful for the growth of the manufacturing sectors. Hence, inflation and sectoral output of Pakistan are inter-dependant to each other as it could increase the sectoral output to some extent at the cost of hurting all sectoral growth of Pakistan's economy.

An extensive, detailed and comprehensive literature shows that working capital management has gained augmented attention among the researchers, academicians, and practitioners in different parts of the world. However, there are no reported studies where the performance of various working capital management measures and effect of the working capital management on the firm's performance is studied in detail and compared at sectoral level for the manufacturing firms. The imperative part of this study is to determine an obstinate ground on which the appraisal of the working capital management on firm's performance across sectors can be based. Most of the empirical studies conducted to examine the association between the working capital management and profitability around the globe is based on the static models, but the recent empirical studies focused on the significance of the dynamic framework in the developing economies to analyze the importance of dynamic working capital level among the manufacturing firms.

From the practical point of view, the study extends important policy direction for the financial managers because this is a comprehensive and extensive study on working capital management and firm's performance on sectoral basis by examining different components of working capital management with firm's performance by using large set of variables, large sample size, and extended study period particularly in the manufacturing sector at large and especially in context of Pakistan in order to overcome the limitations faced by the previous researchers (Raheman *et al.*, 2010; Haq *et al.*, 2011; Sharma and Kumar, 2011; Ray, 2012; Ruichao Lu, 2013; Jayarathne, 2014; Iqbal and Zhuquan, 2015). Furthermore, the outcome of this research will facilitate the researchers, academicians, policy makers, investors, shareholders, creditors, auditors and all other financial agencies to formulate and design a comprehensive future policy in order to manage and strengthen the working capital more effectively and efficiently in general and manufacturing sector in particular especially for a developing economy like Pakistan.

1.8 Scope of the Study

The scope of this research is to investigate the effect of the working capital on the firm's performance at both the overall level as well as at the sectoral level. This study is a comprehensive and extensive study, which uses the balanced panel data of the of all the 294 listed manufacturing firms for a period of eleven years covering from 2001 to 2012, and the secondary data are extracted from the websites of Karachi Stock Exchange which is the largest stock exchange in Pakistan. The study is to examine the association of the working capital components on the firm's performance based on accounting based profitability measures, firms growth measures as well as the market based profitability measures. The dependent variables used in the study are return on assets, net profitability margin, firms growth, and Tobin Q, whereas the independent variables include cash conversion cycle, net trade cycle, current ratio, current assets to total assets ratio, and control variables are size of the firm, firms age, financial debt ratio, inflation and gross domestic product.

In addition to this, the study used different panel data analysis techniques like ordinary least square method, fixed and random effect models and the generalized method of moments (GMM) to empirically examine the effect of the working capital at the overall and sectoral level across the manufacturing sectors of Pakistan.

1.9 Operational Definitions

The operational definitions of variables used in the current research study are as follows:

1.9.1 Return on Assets (ROA)

Return on assets is measure of profitability which indicates the amount of profit which the firm generates as a percentage of the total assets.

1.9.2 Net Profitability Margin (NPM)

Net profitability margin reveals the amount of profit that a firm can extract from its total sales.

1.9.3 Firms Growth (FG)

Firm's growth has the ability to increase sales over a sustained time period.

1.9.4 Tobin Q (TQ)

Tobin Q is a measure of the firm's assets in relation to the market value of the firm.

1.9.5 Cash Conversion Cycle (CCC)

Cash conversion cycle is the length of time between a firm's purchase of inventory and receipt of cash from accounts receivables.

1.9.6 Net Trade Cycle (NTC)

Net Trade cycle means how fast it takes for cash to go from the cash balance through the regular trade cycle of the business.

1.9.7 Current Ratio (CR)

Current ratio shows the proportion of the current assets to current liabilities.

1.9.8 Current Assets to Total Assets Ratio (CATAR)

Current assets to total assets indicate the extent of the total funds invested for the purpose of the working capital.

1.9.9 Size of the Firm (LOS)

Size of the firm has been defined in the form of natural logarithm of the firm's sales.

1.9.10 Firms Age (FAGE)

The difference between date of estimation and date of incorporation is considered as firm's age.

1.9.11 Financial debt Ratio (FDR)

Financial debt ratio has been defined as set of short term and long term loans over the total assets.

1.9.12 Inflation (INF)

Inflation is the incessant increase in the prices measured as consumer price index.

1.9.13 Gross Domestic Product (GDP)

Gross domestic product is an economic indicator which measures the country's total output.

1.10 Organization of the Thesis

Chapter 1 pronounces the general overview of the chapter, background of the study, problem statement, justification of the study, and an overview of sector wise performance of Pakistani economic groups, research objectives, research questions, and significance of the study, scope of the study and operational definitions and finally the sketch of the thesis. Chapter 2 commences with the introduction followed by the definition of the working capital, concept of working capital management, significance of working capital management, extensive review of the theoretical and empirical literature on working capital management theories, theoretical framework and hypotheses development, justification for choosing Pakistan, sectoral performance in Pakistan and finally the summary of the findings from the literature. Chapter 3 outlines the research methodology. This chapter summarizes the sampling data, data compilation, and explanation of the methodological practice and the statistical tools that will be used in the study for analytical purpose. Chapter 4 condenses the findings of the sample data and addresses the research questions which fortify this chapter. Finally, chapter 5 summarizes and highlights the key findings which are based on the research objectives. This concludes the chapter by explaining the research and policy implications, contributions of the study, limitations of the study, future research and conclusions.

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