Factors Affecting Working Capital Management Practices and Determining Firms' Performance: A Comparative Analysis of Listed Companies in Pakistan

By

Said Shah

A research thesis submitted to the Department of Management & Social Sciences,
Capital University of Science and Technology, Islamabad
in partial fulfillment of the requirements for the degree of

**DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCES
(FINANCE)**

**DEPARTMENT OF MANAGEMENT & SOCIAL SCIENCES
CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
ISLAMABAD
SEPTEMBER 2016**

Factors Affecting Working Capital Management Practices and Determining Firm's performance: A Comparative Analysis of Listed Companies in Pakistan

By

Said Shah

A research thesis submitted to the Department of Management & Social Sciences,
Capital University of Science and Technology, Islamabad
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCES

(FINANCE)

**DEPARTMENT OF MANAGEMENT & SOCIAL SCIENCES
CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
ISLAMABAD
SEPTEMBER 2016**

DEDICATED TO

THE LAST PROPHET OF ALLAH (SWT),

HAZRAT MUHAMMAD (SAW)

SENT AS

RAHMATUL–LIL-ALAMEEN (MERCY TO THE WORLDS)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ATR	Acid Test Ratio
CA	Current Assets
CAR	Cash Ratio
CCC	Cash Conversion Cycle
CG	Corporate Governance
CGI	Corporate Governance Index
CR	Current Ratio
CUSUM	Cumulative Sum
DDM	Dummy for DFs and MNFs (Location)
DFs	Domestic Firms
FE	Fixed Effect
FMCGs	Fast Moving Consumer Goods
IA	Industrial Average
PSE	Pakistan Stock Exchange
LTF	Long Term Financing
LTI	Long Term Investment
Max	Maximum
MBR	Market to Book Ratio
MC	Market Capitalization
Min	Minimum
MNEs	Multinational Enterprises
MNFs	Multinational Firms
OLS	Ordinary Least Square
PCA	Permanent Current Assets
RE	Random Effect
ROA	Return on Assets
SA	Sample Average
SD	Standard Deviation
SE	Standard Error
SECP	Securities and Exchange Commission of Pakistan
SG	Sales Growth
Skew	Skewness
TQ	Tobin's Q
VIF	Variance Inflation Factor
WC	Working Capital
WCM	Working Capital Management
WCME	Working Capital Management Efficiency

ACKNOWLEDGEMENT

ABSTRACT

In order to produce good financial results and improve operational performance, a firm should effectively and efficiently manage its working capital. Working capital policies and practices vary from firm to firm which leads to variation in profitability. A difference in working capital practices is observed on the basis of size and location. Review of existing literature indicates that this variation in working capital management practices among various categories of firms such as small, medium, large, domestic and multinationals has not yet been adequately researched, particularly in developing countries like Pakistan. The study uses secondary data of 153 listed firms on Pakistan Stock Exchange for 10 years (2004-2013). These firms are categorized on the basis of size viz. small, medium and large; as well as location such as domestic and multinationals.

R-square shows that highest explanatory power of the independent and control variables included in the model based on market to book ratio occur in multinational firms where dependent variable is explained to the extent of 41% whereas based on return on assets it is 26% in medium firms. Results show that working capital policy significantly affects firms' performance. Multinomial logistic regression model was used to identify factors significantly affecting WC policy. Logistic regression results show that ROA and MC are the variables determining the WC policy of firms significant at 5% and 1% respectively. Overall, correct predictions for the study employing logistic regression model work out to be 71.9% showing fitness of the model used for analysis.

Keywords: Firms' Performance, Market Capitalization, Market to Book Ratio, Multinational Firms, Working Capital Policy, Working Capital Management Efficiency,

1   INTRODUCTION

All investments are expected to produce returns appropriate to their costs - this is equally true of the funds invested by manufacturing companies in the current side of their operations. Proper management of working capital (WC) therefore rightfully attracts a lot of attention. As such, despite the commonly held belief that the prime source of profits for a manufacturing company is the efficiency of its production plant, good financial managers know that they can significantly improve the bottom line (and other important metrics) by adopting the right WC policy, efficient management of WC and following good corporate governance (CG) practices. As far as the relationship between the quality of CG and the firm's performance is concerned, there are two commonly held views on the quality of CG and profitability of multinational corporations operating in the developing countries. The first view (Tallman & Li; 1996) states that the quality of CG practiced by multinational corporations is generally higher than that of domestic companies. The second view postulates that multinational corporations show better financial performance than domestic companies (Ndlovu et al 2013). An inference that can reasonably be drawn from these two views is that there is a positive relationship between the quality of CG and financial performance of firms. The converse side of this coin is that domestic companies have lower profitability due to the poor quality of their CG. But our research into the quality of CG in multinational corporations and domestic companies operating in Pakistan and their respective financial performances divulges an interesting departure from these pervasive inferences. Looking at the issue with a slightly different angle, this research examines the impact of firms' location on its CG quality and ultimately their profitability. The term location is a euphemism for origin, viz. multinational and domestic firms.

Initially the concept of WC was used with different names. Smith (1776) used the word 'circulating capital' and Marx (1867) 'variable capital'. Although working capital management (WCM) receives less attention in the literature than longer-term investment and financing decisions, it occupies the major portion of a financial manager's time and attention (Weston & Brigham, 1979). Major portion of firms' sources are invested in short term assets and liabilities. As per data obtained from State Bank of Pakistan for 2004-13, average receivables are 11.91%,

inventory 10.95% and payables 20.48% of total assets in corporate sector of Pakistan. Because of such a huge investment in current assets, effective and efficient WCM practices are expected. WCM indicates maintaining balance among current assets and liabilities to maximize profit as well as earning per share. In other words, keeping optimal level of current assets and liabilities is called WCM. WCM like other investment decisions, also involve risk element and have a significant effect on profitability of a firm. Ineffective policies of WCM lead to over or under investment in WC affecting a firm's profitability (Smith 1973; Afza & Nazir 2008).

A lack of understanding of the true nature of WC has significant ramifications for the style of management adopted to formulate the WC policy and handle the operational aspects of a manufacturing business. In turn it affects the overall financial performance of a company. Our literature review reveals a bias of researchers towards confining their studies on WC to "the inter-play between current assets and current liabilities of a firm." This undermines the importance of WCM as a key element of firm's capital structure policy. We believe this neglect becomes more pronounced in the case of manufacturing companies where more managerial energies are expended on improving the physical efficiency of plant & machinery than on achieving better operational results through careful management of WC operations.

A view offered by Guthmann and Dougall in 1948 that WC indicates surplus in current assets over current liabilities continues to hold sway to this day. Park and Gladson (1963) defined WCM as "maintaining a proper balance between current assets and current liabilities to maximize profits". In 1955, Sagan offered an even narrower view of WC, confining it to money (or cash balances) and termed it as a lubricant that oils the wheels of industry. This sad view was supported by Sagner in 2014 saying firms lack the quality of effective funds management and keep their funds liquid, mobile and available. All these definitions still find their place in textbooks, perpetuating the belief that WCM is nothing beyond monitoring the levels of current assets, cash in particular. The realty is somewhat different.

We did find some pragmatic views on the subject. Smith (1973) said that "most of the business failures are due to lack of proper WCM". Since major portion of firms' sources are invested in short term assets and liabilities, poor short term financing decisions may lead to increase in number of sick industrial units. Due to significant impact of WCM on firms' profitability, an

efficient synchronization in assets and liabilities is required (Deloof, 2003). Location (whether a firm operates domestically or internationally) also affects firms' performance. According to Ameer (2010), multinational firms (MNFs) have better WCM policies than domestic firms (DFs) which helps maximize their value. The main source for multinationals' superior performance is their competitive advantage (Grant, 1987).

Location (whether a firm is domestic or multinational), size and CG practices may also affect the working capital management efficiency (WCME) and performance of firms. There are MNFs having budgets exceeding some national gross domestic products. MNFs having huge sources of finance considerably influence world as well as domestic economies. This is also true in case of Pakistan where a large number of MNFs operate (26.80% of the sample used in this study are MNFs). The results of the study, if implemented by the DFs as well as MNFs will have far reaching effects on the economies of their parent and host countries. Besides, social benefits such as uplift of education, improvement in providing better health facilities, stability in political system and consistency in government policies are expected. MNFs must be technically, professionally, and size-wise stronger than DFs to avail the benefits of scale economies (Markusen, 1995). This study, besides investigating the impact of WC policy, WCME, location, size and CG also compares the performance of MNFs with DFs and small firms with large firms.

Financially strong firms have much portion of short term loans on their balance sheets. Adequate research relevant to the field is not available and much of the literature that exists in corporate finance is related to long term investment and financing decisions. Despite the frequent interaction of the finance managers with WC requirement, the source of finance and investment is ignored. Prior to early 1970s, liquidity management was identified with the management of individual current assets or liabilities as such early research used accounting information to analyze specific activities (Gentry, 1988; Teruael & Solano, 2007; Morris, 2009). Models linking together two or more liquidity components were developed with the growth in knowledge base. Stone (1973, 1975, 2012), realizing the importance of formalizing bank credit, deposit in and withdrawals from banks identified the design of a firm's banking system. Schiff and Lieber (2012) established the relationship between receivables and inventories. Bierman et al (1975), concentrated on linking the models found in marketing, finance and production with each other to evaluate the consequences of decisions in the functional areas.

1.1 Motivation, Background and Statement of the Problem

In order to regulate the corporate sector with regard to enlisting of the firms, selecting the CG practices and ensuring the liquidity maintenance, various institutions are assigned the responsibility throughout the world. In USA this responsibility is given to Securities and Exchange Commission and Federal Reserve System. In UK, Bank of England, Prudential Regulations Authority and Financial Conduct Authority, in Saudi Arabia, Capital Market Authority, in Germany, Federal Financial Supervisory Authority, in India, Reserve Bank of India and Securities and Exchange Board of India, in China, China Securities Regulatory Commission, China Banking Regulatory Commission and China Insurance Regulatory Commission and in Russia, Central Bank of Russia. In Pakistan, this responsibility is assigned to Securities and Exchange Commission of Pakistan (SECP) and State Bank of Pakistan. Despite presence of implementing authorities and the fact that chief financial officers give maximum time to management of WC, Pakistani corporate sector like other developing economies of the region (India and Bangladesh) is behind the target and a large number of businesses failed there. This may be because of their inability to properly implement the prudential regulations framed by corporate regulators (Smith, 1973).

Pakistani corporate sector is a diversified composition of small, medium and large as well as DFs and MNFs. MNFs, in addition to follow the law of the land are also bound to observe the law of their respective host countries and policies framed by their managements leading to creation of a dilemma. Naturally, because of diversified expertise and exposures of MNFs and strong resource base of large firms, a considerable edge of the performance of these firms is expected over domestic and small firms. WCM practices substantially impact the profitability of firms. Review of literature shows that there is no research on the factors responsible for variation in WCM efficiencies and performance among various categories of manufacturing firms on the basis of size, location, WC strategies and quality of CG. This study will provide a comprehensive picture of corporate sector of Pakistan by analyzing the impact of size, location, WCME, WC policy and CG on firms' performance. By investigating the variation in performances of DFs and MNFs, the study also analyze the mutual impact between domestic corporate sector of Pakistan and the world corporate sector.

1.2 Research Questions

The research questions explained and answered in this study are as follows:

1. Does the size and location of firm affect cash conversion cycle (CCC) and WCME?
2. What type of WC policy is adopted by different categories of firms?
3. How can a WC policy affect firms' performance?
4. Are CG practices affected by firms' size and location?
5. What is the impact of CG on firm's performance?
6. Are the independent variables used in the study are exclusive factors affecting firms' performance or there are other factors too influencing profitability?
7. Which independent variable or group of variables is most influential?

1.3 Objectives of the Study

Main objectives of the study are given below:

- To examine and determine the impact of WCM on profitability of firms
- To analyze and determine the WC policies adopted by various categories of firms (small, medium, large, domestic and multinationals) listed on Pakistan Stock Exchange (PSE).
- To identify the factors leading to variation in the WCM efficiencies of various categories of firms
- To identify the factor (among those used in the study) that most effectively influences firms' performance
- To examine and determine the impact of firms' size and location on CG practices and then the impact of CG practices on WCME and firms' performance

1.4 Significance and Justification of the Study

Previous studies on corporate finance have traditionally focused on long term financial decisions like investment, capital structure and business valuation ignoring decisions related to liquidity management (Faden 2014). As such, cushion is available for research on WCM based on classification of corporate units in various categories according to location and size.

Further, scientific and formal research on WCM is inadequate and there is lack of originality in most of the articles using statistical techniques. It is also evident from the review of existing literature that studies determining the best performing firms and pinpointing good WCM practices followed by these firms which are not followed by weak firms leading to weak performance of the later, are inadequate. Further, the studies available are more or less country specific and the factors chosen to investigate the impact on firms' performance may not have a general applicability. This study envisages addressing and solving the shortcomings in existing research related to WCM in corporate sector of Pakistan in such a way as to easily generalize its results and recommendations.

For this purpose, the study is carried out covering various dimensions of corporate sector; firstly, corporate sector of Pakistan is divided according to location such as DFs and MNFs; secondly, a size-wise categorization is made such as small, medium and large; thirdly, WCM (WC policy and CCC) and CG practices of 'all firms' are compared according to size and location to find out the major factor(s) contributing to their financial performance and lastly, overall findings are presented suggesting the most influential and effective tool of improving firms' performance. Thus this study is new and unique of its kind.

1.5   Contributions of the Study

The study contributes to the academic literature as follows:

1. The research available on WCM is mostly related to its impact on firms' performance. Study reveals that no research is available on identification of the factors with regard to variation in WCM efficiencies of firms on the basis of categorization such as location and size, leading to variation in their financial and operational performances. What financially and operationally sound firms do to manage their WC which weak firms do not do and vice versa leading to variation in WCM practices. By finding and analyzing these factors, weak firms can learn a lot which can make them successful. Thus the study increases main body of knowledge by identifying factors leading to changes in WCM efficiencies and exploring WCM practices followed by various categories of firms.

2. The study further analyzes the corporate sector of Pakistan according to the WC strategies and determines which strategy gives good financial results.
3. The study is also extended to investigate the impact of CG on firm's profitability.
4. The results and recommendation of the study may be used by academicians for further research, by regulators and financial planners as guideline to further refine and improve their policies as well as by investors for helping in taking their investment decisions.

1.6 Limitations of the Study

Limitations and constraints of the study are as under:

1. Sample size was restricted to 153 firms as complete data for the period selected to carry out the study were available only for these firms.
2. For determining the quality of CG, only sample average (SA) has been used as bench mark due to non availability of industrial average (IA).

1.7 Organization of the Study

The study is spread over five chapters as under:

First chapter is on introduction, motivation, background, problem statement, research questions, objectives, significance, justification, contribution, limitations and organization of the study.

Second chapter offers theoretical background, literature review and hypotheses of the study.

Chapter three explains a brief background of Pakistani stock market, the data type, methodology, criteria for categorization of firms, variables, models and software used in the study.

Chapter four presents results and discussion covering ratio, descriptive, correlation, multivariate and logistic regression analyses.

Chapter five draws conclusion and give overall finding of the study.

2 LITERATURE REVIEW

Existing literature indicates that most of the research is variable specific relating one or more independent variables with a single dependent variable. A limited amount of research is available that focuses on the composite impact of multi independent variables on multi dependent variables.

2.1 An Overview

Though it is very much difficult (even impossible) to commission a plant (after huge fixed investment) into operations without an appropriate level of investment in WC and firms smooth fixed investment in the short run with the help of WC as evident from the negative coefficient of endogenous WC investment in a fixed-investment regression (Fazzari & Petersen 1993), the role of WC is left neglected (or more appropriately stated that this component is not being given its due status) as both a use and a source of funds. Keeping in view the main objectives of the study to investigate the efficiency of all categories of firms (size-wise and location-wise) with regard to WCM, WC policy, WCME and CG as well as to find out factors responsible for their variation in these categories, it is essential to analyze them with reference to the most relevant theories. Financial managers must properly and prudently decide about the sources and duration of funds selection to maximize the value of firms on one side for the sake of owners and satisfy the rest of the stakeholders on the other side by provision of job satisfaction to employees, attractive benefits to the senior executives, improving the quality of product and providing health friendly environment to the society. This is possible only by finding less costly sources and utilizing them to the maximum and minimizing (or eliminating) the trust deficit between the ownership and management.

In this regard, many theories are introduced with the passage of time back from investment, stock market efficiency, internationalization and agency theories (Miller & Modigliani 1958; Hymer 1960; Fama 1965; Alchian & Demsetz 1972; Jensen & Meckling 1976) focusing on domestic and foreign investment coupled with the trust deficit between owners and management

to institutional-centric, convergence and signaling theories (Clarke 2004; Arestis et al 2005; Kapopoulos & Lazaretou 2007; Rhee & Lee 2008) targeting gains arising from the economic logic embedded in the theory underlying financial liberalization, international CG practices and impact of ownership structures on firms' performance. According to Lenaerts and Merlevede (2015), large foreign firms are less entrenched in the domestic economy because they are more likely to bring their own suppliers, import intermediate inputs and export their output. Smaller foreign firms lack the scale to convey spillovers to DFs. Further, MNFs' size adequately proxies for these spillover mechanisms, DFs' size has an unclear relationship with the different mechanisms.

2.2   Theories of Corporate Finance

Theoretical base of the study can be found in multinational enterprises (MNEs) theory covering complete explanation of the concept of MNF, motives behind investing abroad and procedures adopted for investing abroad by these MNFs (Hymer 1960, Dunning 1988, Yu & Ito 1988, Hennart & Park 1994), Agency Theory (Jensen & Meckling 1976), Pecking Order Theory (Donaldson 1961, Myers & Mailuf, 1984), Operating Cycle Theory (Park & Gladson 1963), Financing Theory (Emery 1987), Liquidity Theory (Nielson 2002) and Trade off Theory (Brounen et al 2006). MNEs theory view an MNF from different perspectives such as defines an MNF as a firm that owns and controls activities in two or more different countries. MNEs theory further states that MNFs and DFs diverge in terms of environmental homogeneity or heterogeneity.

2.3   Classification of Literature Review

During last two decades the economies of developing countries gone through an evolution consist of several key steps and issues affecting capital inflows in these emerging economies. These steps/issues ranges from liberalization of financial decisions and economy in 2006 to the poor state of institutions, political uncertainty, lack of transparency and poor CG in 2009 and then financial crises in 2012 (Bussière. & Phylaktis 2016). This diverted attention of many governments who started thinking seriously towards attracting international investors. In order to adjust their corporate policies due to these steps/issues, corporate sectors of emerging

economies experienced a major shift mainly related to WCM and CG coupled with foreign investments. In order to refresh the available studies examining the adjustment process adopted by developing countries with regard to WCM, CG, firms' location and size as well as variables used in the study, the literature is classified as under:

2.3.1 Firms' Performance and Working Capital Management Efficiency

DFs have some clear advantages over MNFs such as; they know the market better as almost their entire management team is local, their management and staff costs are lower, and they have better connections in regulatory circles as well as the supply chain process. MNFs have to incur higher costs to neutralize these advantages; hence they need some additional competencies to remain competitive in the market. These may include superior human resource expertise, more advanced technology, economies of scale, etc. As business history has demonstrated, one of the key competencies of MNFs is their ability to tailor their WC policies to suit the specific nature of their particular business and territory. The lessons learned by them from operating in a large number of countries hold them in good stead when defining WC practices for a new territory. In Pakistan, we discovered that most multinational manufacturing companies offer no or little credit facilities to their customers. On the other hand, most domestic manufacturing companies offer fairly generous credit terms to their clients. This simple fact alone can make a difference of around 3 to 5% in net profit percentage on sales figure. Admittedly, a decision to offer or not to offer credit terms is influenced by several factors other than sheer desire to cut financial costs. But virtually all those factors are related to attaining a competitive edge in the market through better investment in long term assets (thus getting superior quality products at relatively lower per unit cost); thereby enabling a company to significantly reduce its investment in trade receivables.

This is a strategic financial investment decision that can be taken only when the entire financial structure is being reviewed – it cannot be taken by "creating a balance" between the number of days credit extended (to clients) and the number of days credit received (from suppliers). There is of course no reason why domestic companies cannot benefit from adopting similar investment strategies. As such one of the objectives of this study is to demonstrate that attention to individual current assets and liabilities levels is not the best way to manage WC. Investment in WC must form part of a firm's capital structure decision. Once a company (located in any

developing country or across the globe in general) is able to create a harmony between its capital structure and WC policies, it will be able to reap the benefits at the operational levels with visible impact on the bottom line and share price.

Previous studies examined and measured the variations in financial performance of corporate units in different ways. Sharpe (1964) and Fama & French (1992) used stock returns as proxy of firms' performance, Deloof (2003) used gross and net operating incomes, Connor & Sehgal (2001) measured firms performance using profit before depreciation and taxes whereas Padachi (2006) used return on assets as a measure of firms profitability.

Larimo et al (2016) investigated the determinant factors of performance measures and found that firms' motives, level of trust and cultural distance between foreign and local firms all have a strong influence on the choice of performance measures used. They also found that the host country's experience influences the choice of performance measurement. Santos and Brito (2012) analyzed data collected from 116 Brazilian senior corporate managers and made two contributions in the literature on firms' financial performance viz; the instrumental contribution, related to the scale itself which can be used in full or partial based on the nature of each desired investigation and the conceptual contribution which pertains to the performance dimensionality such as financial performance, customer satisfaction, employee satisfaction, social performance and environmental performance. Kim (2010) used firm's idiosyncratic returns, systematic risks, idiosyncratic risks, stock return and total risks as measures of firms' performance and investigated their dependence on corporate social responsibility (CSR) on the basis of monthly holding period returns collected for 100 companies. He found a negative relationship of CSR with firm's systematic and unsystematic risks, suggesting that once recognized as ethical company, a firm can reduce its risks. Based on a sample of 15,541 firms covering a period from 1982 to 2011 and using stock and operating performance as dependent variables, Aktas et al (2015) found that positive excess in net operating WC is negatively and statistically significantly related to both stock and operating performance.

Depending on the nature of industry, a major portion of firms' resources are invested in short term assets. Efficiency of a firm with regard to WCM depends upon the size of CCC. Firms having short CCCs are considered to have efficient WCM policy and those pursuing long CCCs

are considered to have inefficient WCM policy. Examining the impact of national culture on firm investment efficiency and using data of listed companies for 18 countries, Zhang et al (2016) found a significant influence of national cultures on firm investment efficiency and a major role in determining firms' investment decisions. Investigating the impact of CCC on firms' performance for 2008-2011, using a seemingly unrelated regression model and cross-sectional panel data covering 13,797 firms, Yazdanfar and Ohman (2014) found that CCC significantly affects profitability as such managers can increase firms' profitability by improving their WCME. Kim et al (1998) found that optimal amount of liquidity is determined by a tradeoff between the low return earned on liquid assets and the benefit of minimizing the need for costly external financing. As such, cost of external financing, the variance of future cash flows and the return on future investment opportunities lead to the optimal investment in liquidity. Based on analyzing data covering a period of four years from 1975 to 1978, Richards and Laughlin (1980) advocated CCC to be calculated to find out the actual WC requirements of a firm. Using performance ranking criteria, on the basis of three parameters–cash conversion efficiency, days operating cycle and days WC, Anand & Gupta (2001) evaluated WCM performance of 427 firms covering a period of 1998-2001 and found an imperative role for these parameters in determining firms' WC requirements and increasing firms' value.

Ogundipe et al (2012) found a positive impact of WCME on profitability of firms. Charitou et al (2010), used multivariate regression analysis and a data set of 43 firms listed in the Cyprus Stock Exchange for the period 1998-2007, found that CCC has an inverse relationship with firms' profitability. According to Gentry et al (1990), the longer the weighted operating cycle the smaller the gap between the unadjusted and weighted operating cycles. The larger the payable weight, the shorter the weighted CCC, given the weighted operating cycle. Teruel & Solano (2007) on the basis of analyzing 8,872 small and medium firms covering the period 1996-2002 and using the panel data methodology, found that a firm can increase its value by reducing length of CCC. Simutin (2010) conclude that firms with more excess cash have higher systematic risk and earn lower returns during slump as compared to firms with less excess cash. Small firms being incapable to raise debt are compelled to rely on equity whereas large firms being capable to raise debt but having free cash flow do not opt for the same utilizing their free cash flow to pay exceptionally high cash dividends causing their stock prices to go up (Byoun & Xu 2013).

Successful firms allow less credit period (collection period) to their customers resulting less WC requirements and more operating profit while weak firms avail less credit period (payment period) from their suppliers resulting more WC requirements and less operating profit. Deloof (2003) investigated the relationship between average collection period and profitability of firms and found that firms can increase their value by reducing days receivable and taking long to pay their creditors**.** Padachi (2006) examined the trends in WCM and its impact on firms' performance using a sample of 58 small manufacturing firms and panel data analysis for the period 1998 –2003 to identify the causes of inter-industries WCM efficiencies. Using regression analysis, he found that high investment in inventories and receivables results in lower profitability. Ali (2011) examined the relationship between WCM and the profitability of textile firms in Pakistan analyzing 160 textile firms for the period 2000–05 using an ordinary least square (OLS) model with fixed effect specification and found that average days inventory, average days receivable and average days payable have a significant economic impact on profitability. Bhattacharyya (1987) argued that operating cycle theory is incapable to explain the firms' WC requirements rather he presented techno-financial theory of WC having the unique advantage of enabling a finance manager to view and control the entire operating system of the business in terms of a single unit of measurement-the core WC multiplier.

2.3.2 Firms' Size

There is no consensus in the literature about how to measure firm size (Dalbor et al, 2004). Previous studies show many bases for determining the size of firm. Vithessonthi and Tongurai (2015) used median of total assets as proxy of firms' size, examined its impact on the relationship between leverage and operating performance for a period from 2007–2009 using data set of 496,430 firm-year observations of 170,013 firms, found that the magnitude of the leverage effect on operating performance is non-monotonic rather it is linked with firm size. As such it is positive in small firms and negative in large firms. Analyzing the scope of corporate entrepreneurship within the framework of large public firms, competitive advantages of corporate entrepreneurship through loose resources and resource structuring processes coupled with disadvantages through bureaucratic structures and resource bundling expected from firms' size, Nason et al (2015), provided greater identity to the literature on corporate entrepreneurship incorporating the role of organizational size and suggested that small firms are more likely to utilize corporate entrepreneurship for growth to overcome liabilities of smallness, while large

firms are more likely to utilize corporate entrepreneurship for learning to overcome liabilities of inactivity. Examining size-wise corporate bankruptcy and using number of employees as firms' size, Mueller and Stegmaier (2015) concluded that approximately 83 % of all bankruptcies occur in plants with not more than 10 employees, 61 % of all bankrupt plants are not older than 5 years and substantial negative age dependence with respect to bankruptcy risk but confirm negative size dependence for mature plants only.

Al-Mwalla (2012) calculated firm size by using natural log of sales and found that profitability of a firm is positively related with its size, sales growth (SG) and gross domestic product growth. Hansen & Birger (1989) used natural log of assets as a measure of firm size, analyzed a sample of 60 Fortune 1000 firms, integrated economic and organizational aspects of firm performance and found a positive relationship between firm's size and its performance. Dalbor et al (2004) used total assets, total sales, number of owners, and number of employees as proxies of firms' size however found number of owners and total assets as the most influential variables with maximum explanatory power. On the basis of number of owners and total assets, they examined the impact of size on use of debt by restaurant firms and found that owners often use debt as a mechanism to minimize agency costs in large firms. Using data of non-financial firms, covering a period from 1987 to 2000 for market oriented economies (such as United Kingdom and the United States) and bank oriented economies (like France, Germany and Japan) and measuring firms' size on the basis of total sales, Antoniou et al (2008) investigated the determinants of firms' capital structure and found that the capital structure of a firm is heavily influenced by the economic environment, institutions, CG practices, tax systems, the borrower-lender relationship, exposure to capital markets, and the level of investor safety in the host country.

Du and Girma (2009) investigated the relationship between firm size and financial structure in China using number of employees as firms' size and found that financing source influence growth more in small firms as compared to large firms. They further found that internally generated funds are more effective for promoting small firms and external finance is effective for large firms. Fama and French (1992) calculated firms' size (portfolio size) on the basis of market equity using secondary data of non financial firms for a period ranging from 1962 to 1989. They found that size and book-to-market equity explain the cross-sectional variation in average stock returns related to size, earning/price ratio, book-to-market equity and leverage. Mirza and

Shahid, (2008) sorted six portfolios, determining their size on the basis of market capitalization (MC) as price times number of shares for five years (2003-2007), using median of the sample to split the stocks into small, medium and large and got findings in support of the Fama and French three factor-approach.

Driver (2006) obtained data of UK manufacturing firms covering a period of 1987-2004 from Industrial Trends Survey of the Confederation of British Industry, classified it into four size groups on the basis of number of employees, estimated the determinants of optimism using OLS and seemingly unrelated regression equations models and found similarities in all the size groups except medium size group to have been unusually affected by real interest rates and that medium and large size groups invest less as compared to small firms. Majumdar (1997) investigated the impact of size (measured by natural log of sales) and age of firms on their productivity and profitability using 1,020 Indian firms and found that in India older firms are more productive and less profitable, whereas the larger firms are more profitable and less productive. According to Penrose, (1959), because of their advantages like economy of scale, diversified capabilities and more formal procedures, the performance of large firms is superior to small firms. On the basis of regression analysis, and using natural log of sales as proxy of firms' size, Padachi (2006) found that with the growth in size of a firm, its agency problem increases leading to inefficient management of WC. Connor & Sehgal (2001) examined the impact of market, size and book to market ratio on stock returns in India using multivariate regression analysis and MC as portfolio size. They found that all these three factors (market, size and book to market ratio) explain stock returns.

There are many ways; the size of a firm affects its performance. The characteristics like diverse capabilities, the ability to make use of scale economies and formalization of procedures make a larger firm superior than smaller firms in terms of financial performance (Penrose 1959). Pakistani corporate sector is a diversified composition of small, medium and large firms. Large firms enjoy a substantial edge over small and medium firms in terms of financial performance due to their sound resource base, economy of production costs, better quality of product due to division of labor and research and development. But at the same time, these large scale organizations are also facing some problems as compared to small firms such as loopholes in supervision, agency problem and lesser adaptability (conversion from one type of production to

15

another type of production). Similarly, small firms enjoy some benefits over large firms such as close supervision, low requirement of capital to commence business and close relation with their customers hence can produce goods according to the taste and fashion of each individual customer. However, at the same time, these firms face problems like high cost of production per unit, difficulty in getting loans, lack of research and use of old techniques and obsolete machines.

Developing countries like Pakistan that are characterized by low per-capita income, low human capital, high poverty, higher population growth rates coupled with predominance of agriculture, low levels of industrialization, dominance of informal sector and underdeveloped labor, need both the large scale firms as well as smaller firms for their economic growth. Larger firms have the capability to raise debt, division of labor, scale economies and access to innovative techniques of production and marketing. On the other hand, existence of small and medium sized firms requiring lesser capital and low level of entrepreneurship skills are also necessary as they can reach all corners of the country and provide vital services and assistance to all segments of the population. Smaller firms with weak liquidity position have to rely on credit facility and often become insolvent, due to their weak financial performance and poor record keeping systems. Small firms also find it difficult to raise long term debt, and are compelled to rely on equity. Larger firms have twin advantage here: they can raise long term debt on better terms and also have adequate free cash flows which they can use to push up their share prices through heavy cash dividends or investment in expansion programs.

There are many reasons why firm size is a key determinant of its financial performance. Firstly; a firm's size itself is an important indicator of its financial performance. Assuming balance sheet's size as a proxy of firms' size, an increase in it indicates growth in earnings. For instance Rajan and Zingales (1998) found that two-thirds of the growth in industries over the 1980s comes from the growth in the size of existing establishments, and only the remaining one-third from the creation of new ones. Secondly; selecting a firm's size will answer certain questions from the owner(s) such as how much funds are available to establish a business concern? What is the quality and quantity of available human capital? What is the accessibility of raw material and what is the capability of the firm to obtain that? Which working capital (WC) policy to use? What type of capital structure is going to adopt and so on; and thirdly; number of firms having the same size will provide a driving force for a country's regulatory and institutional system. If

there are more large firms operating in a country, Securities and Exchange authorities will be more active and vice versa.

2.3.3   Firms' Location

The term location in the study is a euphemism for origin, viz. multinational and domestic firms. A multinational firm is an enterprise that owns and controls income generating assets in more than one country (Hood & Young, 1979; Dunning, 1998). Dunning (1988), suggested that ownership, location, and internalization are the three conditions necessary for a firm to have a strong motive to undertake direct investment. The United States, Germany and Sweden require 10%, France 20% and Australia 25% of foreign ownership to be classified as multinationals (Frank, 1980). United Nations' defined a multinational firm as any enterprise controlling assets in two or more countries, having 10 per cent control of voting stock or 25 per cent of sales or assets in a foreign subsidy. Markusen (1995) defined multinationals as firms that engage in direct foreign investment, acquires controlling shares in a foreign firm or sets up a subsidiary in a foreign country. Previous studies exploring the relationship between supply-chain participation and the internationalization of firms (such as that of Giovannetti et al 2015) indicate: firstly, a positive and significant relation between being part of a supply chain and the probability of exporting as well as the intensive margin of trade; secondly, downstream producers tend to benefit more from being part of supply chain and thirdly, that even small and less productive firms, if involved in production chains, can take advantage of reduced costs of entry and economies of scale that enhance their probability of exporting.

Literature on MNEs reveals that, MNFs and DFs diverge in terms of environmental homogeneity or heterogeneity facing firms. MNFs will not feel it feasible to invest in local market if they are exactly identical to DFs, In addition to so many benefits; MNFs are exposed to additional costs in connection with communications, transport, posting their staff abroad, barriers due to language, customs, and law of the land. In order to bear these additional costs and still have room towards profit, MNFs must be technically, professionally and size-wise stronger than DFs to avail the benefits of scale economies. MNEs are also exposed to certain risks such as foreign exchange risk, different tax laws and liquidity in various currencies. In order to cover these risks, Edmunds (1983) proposed an integrated approach of WC for these firms combining domestic and international WC, capital budgeting and capital structures. Further, there are other

factors also which determine investors' choices to invest in domestic or multinational markets. According to Byrne and Fiess (2016), financial openness and quality of CG are identified to be main factors responsible for national whereas advanced economy, long-run bond yields and commodity prices for international capital flows.

According to Rugraff and Hansen (2011), incentives behind investment by MNFs in host (specially) emerging economies should be type of FDI instead of FDI amount, integrated into the state-run development policies, should be available to all investors equally irrespective of industry and nationality of investors, individual treatment of major projects and post implementation monitoring. Examining the role of country-of-origin effects in MNFs, Noorderhaven and Harzing (2003) found that the effects of MNFs on home countries' economies emerge through (1) culture and institutions of the MNF's home country, continued hiring of home-countries' citizens by these MNFs, and administrative preferences of these home-country nationals in the organizational structures, procedures and processes of the MNFs and (2) the homogeneity and substantive characteristics of the home countries' cultures, the size and openness of the home-countries' economies coupled with the cultural and institutional diversity of the environments in which the MNF operates.

It is a common finding of the previous studies that MNFs are performance-wise superior than DFs although with somewhat different justifications. According to Dimelis & Louri, (2002), the superiority of MNFs may be attributed to the advance technology introduced by foreign investors whereas others justify their better performance by product differentiation, international diversities, ability to exploit economies of scales due to better access to financial resources and superior CG mechanisms (Barbosa & Louri 2005; Tallman & Li 1996; Nikolovova 2013). These arguments are more valid for companies operating in developing economies than in industrialized economies.

MNFs are beneficial in many ways both for host and home countries. The benefits of MNFs for the host countries include: (1) increase in their investment, employment and income levels (2) transfer to latest technology from foreign countries to host countries (3) transfer of business management expertise from foreign countries to host countries (4) increase in volume of host countries' trade (5) enhancement in the competitiveness of host countries' firms (6) transfer of

research and development by foreign industries to domestic industries (7) Improvement in the balance of payment of host countries by reducing imports and increasing exports due to goods produced by MNF's in the host countries and (8) Increase in the level of industrial and economic development of host countries due to the growth of MNF's in these countries. The benefits of MNFs for home countries are: (1).increase in marketing opportunities for the products produced by MNFs, (2) increase in employment opportunities to the people of home countries both at home and abroad, (3) boost to the industrial activities of home countries, (4), maintaining favorable balance of payment of the home country in the long run and (5) Opportunities to get the benefit of foreign culture brought by MNFs.

However at the same time, these firms may also bring some disadvantages both for host and home countries. Main disadvantages of MNFs for the host countries may be: (1) Fear of transferring technology which may have become outdated in the home country, (2) risk to the economic and political sovereignty of host countries from MNFs due o their non operation within the national autonomy, (3) risk of monopoly from MNFs to the domestic industry, (4) Indiscriminate use of natural resources of the host countries by MNFs for maximizing their profit causes depletion of these resources and (5) A huge outflow of money in terms of payments towards profits, dividends and royalty of foreign countries (origin to MNFs). Main disadvantages of MNFs for the home countries are: (1) Fear unfavorable balance of payment due to transfer the capital from the home countries to different host countries, (2) No increase in employment opportunities of home countries' people if MNFs adopt geocentric approach and (3) Avoiding the home countries industrial and economic development by MNFs if investments in home countries are more profitable.

Literature review also presents a mix of cost and benefits of MNFs for host countries (Caves, 2007; Buckley & Ghauri, 2004). Besides MNFs' contribution in the economies of host countries such as introduction of new technology, providing employment opportunities and bringing skills, these firms may also have long lasting harmful effects on the economies of these countries in the shape of enhancing their dependence upon foreign help and reducing the entrepreneurship capabilities of the local entrepreneurs. Furthermore, anti-competitive practices of MNFs may reduce consumer welfare and may help build consumption patterns that are unsuited for host

countries. Yet, there is another group of studies (Chen 1999) advocating for marketing strategies and entry modes as the key determinants of MNFs' performance.

Luo and Tan (1998) compared strategic choices of MNFs and DFs in response to a changing environment in an emerging market and found that an MNF's strategic behavior may not be similar to that of DFs in the same environment because of their different controlling authorities. They also found that a good configuration between strategy and environment will generate high profitability for both MNF subunits and DFs operating in the same economy, they suggested that the behavior of multinationals not to become very much practical and aggressive for reducing unwanted instabilities in an unstable environment can lead to high operational performance of these firms and recommended further research on comparing the operational strategies of DFs and MNFs.

Aabo et al (2015) investigated the impact of multinationality on firms' opaqueness using multiple alternative measurements and found a positive significant relationship between the two. Using various firms' traits, Batten and Vinh Vo (2015) found that foreign investors envisage investment for longer term, use an acquire and own approach to take advantage of probable expansion prospects and avoid firms with riskier financial management practices providing information beneficial to domestic investors only. Examining the effects of overseas ownership on the firm-level volatility of stock returns for the period from 2006 to 2012 and using diverse econometric assessment techniques for panel data analysis, Vinh Vo (2015) concluded that foreign investment decreases firm stock price instability in emerging stock markets that may be considered as one of the possible advantages of increasing the stake of domestic stock markets to foreign investors. Jurajda and Stancik (2012) found a positive significant impact of foreign investors on DFs in non-exporting manufacturing industries and nominal impact in industries competing on international markets. Examining the relation between corporate diversification, real earnings management, and firm value, Farooqi et al (2014) found that global diversification combined with industrial diversification improve real activities exploitation. Lee et al (2015) examined the valuation effects of multinationality to identify its role in internalization theory and found a positive effect for MNFs as compared to DFs, as well as the positive effect of multinationality on firm value. They further found that multinationality and intangibility directly and independently influence firm value, without obstructing each other. According to Kim and

Li (2014), a firm whether directly having headquarters in offshore financial centers (OFCs) or indirectly setting up subsidiaries in OFCs, the amount of firm-specific information flowing into stock price is lower for offshore firms than for non-offshore firms. Further, as offshore firms become more aggressive in their tax avoidance strategies, their stock prices hold a lower amount of firm-specific information relative to common information and that a strong offshore inclination also deters firm-specific information flows, thereby driving up stock price synchronicity. These results suggest that the unclear and complex nature of business and financial transactions in OFCs, coupled with their institutional traits (weak and flexible legal enforcement, zero or extremely low taxation, and low litigation risk) provide offshore firms with not only stronger incentives but also the opportunities and means to adopt transparent disclosure policies and aggressive earnings management.

2.3.4 Working Capital Policy

A firm has various options to meet its liquidity requirements. For this purpose, three types of WC policies are in vogue according to the risk taking behavior and target objectives of the firms. These are (1) matching or hedging policy--financing current assets from current sources (maturity period of assets and liabilities is same) (2) aggressive policy--keeping lowest investment in current assets and investing portion of current liabilities in fixed assets (some or all of the liabilities mature earlier than assets) and (3) conservative policy--keeping highest investment in current assets and investing portion of long term liabilities in current assets (some or all of the liabilities mature later than assets). As concluded by Maimbo and Melecky (2016), certain specific characteristics associated with a country systematically influence the scope and quality of state policies which ultimately affect financial system (and of course corporate sector policies).

Easy access to the state of relaxed leverage leads to confidence building among firms with regard to meeting their short term financial requirements thereby affecting the behavior of WC policy adoptability. Normally, leverage level varies across the firms with variation in time, however very few keep debt-to-assets ratios consistently above 0.500 for long periods. Such type of stability in leverage level occurs mainly at low leverage (DeAngelo, 2015). Examining the impact of WCM on corporate performance, Caballero et al (2014) provided strong support for an indirect curved relation between investment in WC and firm performance indicating the

existence of a best possible level of investment in WC that neutralizes costs and benefits leading to maximizing of a firm's value. They also found that the optimal WC level is sensitive to different measures of financial limitations. Examining the relationship between WC aggressiveness and financial performance of manufacturing firms, using secondary data of manufacturing listed firms from 2006 to 2010 and employing multiple linear regressions as statistical tool of analysis, Yusuf and Idowu (2012) found an inverse correlation between financing of total assets by aggressive current assets and aggressive current liabilities resulting in lower returns and recommended not to delay payment of short-term liabilities when due.

On the choice among three leading WC policies, existing literature provides numerous opinions. Firstly, relatively aggressive WC asset policies are balanced by relatively conservative WC financing policies; Secondly, profitable firms are using aggressive investment but conservative financing policy with low investment in current assets and low current liability financing leading to increase profitability; Thirdly, conservative policy has a positive whereas aggressive policy has a negative impact on the firm's profitability/value; fourthly, a large number of firms are using aggressive WC policy; fifthly, overall, there is a significant positive relationship between liquidity of a firm with its performance and; sixthly, efficient WCM is highly valuable, particularly in periods of expanding investment opportunities set and firms that converge to the optimal level of WC, either by increasing or decreasing their investment in it, improve their operating performance. Moreover, these results are not subject to any changes by increasing firm risk following the adoption of aggressive WC policy (Weinraub & Visscher 1998; Hussain et al 2012; Al-Mwalla 2012; Teruel & Solano 2007; Vahid et al 2012; Chukwunweike 2014; Aktas et al 2015). Nasif and ALShubiri (2011) investigated the relationship between aggressive/conservative working capital practices and corporate profitability/risk through cross-sectional regression models and found a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies and that the firms yield negative returns if they follow an aggressive working capital policy. While analyzing the impact of working capital on sales using Karl Pearson's correlation model and secondary data from 1999 to 2008, Panda (2012) found a positive association of sales with gross working capital and negative association with net working capital indicating inclination of industry towards adopting a conservative working capital policy with regard to

mixed use of current assets and liabilities whereas aggressive approach with regard to usage of current assets in excess of current liabilities.

Relating employing WC policy with size, the views provided by previous studies may be summarized as: firstly, small and medium firms having weak liquidity position have to rely on credit facility and become insolvent, due to their weak financial performance and poor record keeping system; secondly, conservative WC policy is being followed by these firms not by choice but because they have no other option or there is lack of options for using any other approach; thirdly, private firms at an average keep 10% of their total assets in cash form and this ratio is more in small firms as compared to large firms; fourthly, different type of WC policy practices differently affect the firm liquidity, efficiency, profitability and capacity usage and fifthly, small and medium sized firms have an optimal level of WC maximizing their profitability. Further, liquid firms prefer to invest heavily in a medium term horizon as compared to short term investment (Ogundipe, Idowu & Ogundipe 2012; Shah et al 2010; Bigelli & Vidal 2012; Bei & Wijewardana 2012, Caballero et al 2012).

The studies on location (Edmunds 1983; Baig 2009) presents a different view of WC policies adopted by MNFs' as these firms are facing more difficulties in this regard than DFs due to various international factors such as foreign exchange risk, liquidity in various currencies, exchange controls, tax considerations in several jurisdictions, interest expense in local as well as home currency. The key issues for WCM in multinational companies are profitability, foreign exchange exposure, tax liability and the volatility of consolidated earnings. These studies also suggest that the multinationals have better WCM policies than the WCM policies of DFs.

2.3.5 Corporate Governance

Contagion and eagerness for money and perks are the leading factors encouraging corporate managers to commit frauds by reporting false profits in the corporate units resulting in scandals as were happened in case of high profile business corporations like Enron (Lavelle 2002), WorldCom and Tyco International. However the effect of contagion can be reduced by adopting effective CG practices. Good CG reduces the contagion effect of scandals. External governance such as state authority has a stronger impact on reducing the contagion effect of both financial and non-financial scandals, whereas ownership concentration and the quality of auditors play a

23

more prominent role in mitigating the contagion effect of financial scandals (Yu et al 2015). To achieve this objective, The Sarbanes–Oxley Act of 2002 was introduced which required the top management of a company to individually certify the financial information. This act, in addition to increasing the independence of the external auditors, has also increased the oversight role of board of directors.

Guo et al (2015) examined the interaction between internal and external governance in firms and found that noncompliant firms significantly reduce exposure to external governance mechanisms such as the market for corporate control, shareholder activism, and credit markets as compared to compliant firms, by adding antitakeover provisions, adopting officer and director protection provisions, and reducing debt levels, respectively and suggested to treat internal and external governance as substitutes. Female boardroom representation does not influence equity risk as there found to be a negative relationship between boardroom gender diversity and firm risk (Sila et al 2016). Liu et al (2014) examined the effect of board gender diversity on firm performance from 1999 to 2011 and found a positive and significant relationship between the two. They further found that female executive directors have a stronger positive effect on firm performance than female independent directors, indicating that the executive effect outweighs the monitoring effect and boards with three or more female directors have a stronger impact on firm performance than boards with two or fewer female directors. Better governance mitigates the disruption caused by the bank credit supply shock to firms' financing and investment activities (Nguyen et al 2015). Zeng and Wang (2015) empirically investigated the effect of CEO gender on corporate cash holdings and the over-investment of free cash flow using a sample of 468 listed firms with female CEOs and a matching sample with male CEOs covering a period from 2007–2011. They found a high association of female CEOs with corporate cash holdings and that they are more conservative than their male counterparts.

Christensen et al (2015) examined small and large companies and found a significant shift by small and large companies to comply with the government recommendations all the time and that existence of an audit committee is significantly associated with improved earnings quality for small and large companies. Because of their close relationship with agency problem, a considerable impact of CG and location on firms' financial performance is expected (Eisenhardt 1989; Tallman & Li; 1996; Lavelle 2002). Existing studies found a significant positive impact of

CG and compliance on firm's performance and a weak positive relationship between compliance and technical efficiency (Tariq & Abbas 2013; Harford et al 2008; Dittmar & Smith 2007). Newton (2015) studied the relationship between chief executive compensation, organizational performance, and quality of CG in large U.S. nonprofit organizations and found that their monitoring mechanisms are weaker, facing potentially more severe agency problems as compared to profit oriented organizations. Resultantly, many executive abuses, like very high pay for very little work.

As this study will amply demonstrate, larger size leads to higher level of agency problems. Smaller firms (and most of the DFs in Pakistan are smaller than MNFs) are closely managed by majority shareholders and therefore have fewer agency issues. This has a bearing on the relative CG index (CGI) of MNFs and DFs. The scale of CG scandals (from WorldCom to Enron to Polly Peck) emanating from MNFs is much greater than what has taken place in DFs. Lee and Chung (2015), examined the relation between institutional investment duration and CG and found that institutional investors with shareholding for a longer period cause an improvement in CGI.

Explaining the relationship between CG, credit ratings and the capital structure of all sizes of firms from 2005 to 2010 and employing panel regression analysis, Dasilas and Papasyriopoulos (2015) found a significant role for CG practices, credit ratings as well as firm-specific determinants such as size, profitability, asset structure and growth opportunities in the capital structure of listed firms. They further found that the influence of CG practices on the capital structure of small and medium sized enterprises is less evident as compared to large firms due to the active involvement of owners in the management of earlier. In emerging economies like Pakistan (and many others) discretionary accruals increase monotonically with the ownership percentage of a firm's directors, their spouses, children, and other family members and that institutional investors play a significant role in constraining earnings management practices. However, CEO duality, the size of the auditing firm, board size and ownership concentration does not influence discretionary accruals (Kamran & Shah 2014).

Chong and Florencio (2006), analyzed the effect of developments in capital markets, laws governing investor protection, the quality of enforcement of these laws and their effect on the

availability of external financing in Mexico using 150 Mexican listed firms for a period from 2002 to 2005 and found that it is only through the development of efficient institutions and investor security that firms can secure the basis for sustainable long run access to finance. Hermalin and Weisbach (2003) found a negative relationship between board size and corporate performance. According to Spencer (2010), "a reasonable board size can depend on how long your board meetings are and how much time you are willing to spend while numerous board members weigh in on agenda topics. The chair will need to make sure that everyone is heard and that everyone's questions are answered. That is easier with smaller rather than larger numbers". According to Butt (2013), CG represents a mechanism used to control and direct the affairs of a corporate body in order to serve and protect the individual and collective interest of all its stakeholders. This explanation of CG provides the motivation for securing the interests of all those persons whose interests are linked with the company, i.e. the stakeholders, including shareholders, management, employees, customers, suppliers, financiers, government, and the society at large.

All these studies conclude a positive role of board size on firms' performance and a positive relationship between the magnitude of agency problem and firm size.

2.4   Hypotheses of the Study

Multinational enterprises theory covers complete explanation of the concept of MNF, motives behind investing abroad and procedures adopted for investing abroad by these MNFs (Hymer 1960, Dunning 1988, Yu & Ito 1988, Hennart & Park 1994), According to agency theory (Jensen & Meckling 1976), managers of large firms may go for keeping higher level of WC for operational convenience whereas in small firms, they prefer keeping WC at minimum. Higher level of WC may mean lower profits due to less efficient use of current assets. In other words, agents may sacrifice a part of the profit (that belongs to principals) for the sake of their own convenience. According to Fama and Jensen (1983), owners specify the rights of each manager in the organization and the evaluation criteria coupled with payoff functions. Based on the concept of this theory, efficiency of a firm depends upon the gap between ownership and management, thus firms become inefficient with an increase in their size and vice versa. In other words firms' performance is affected by CG. Agency theory works validly with regard to

problems of cooperative efforts and is encouraged to be used for tackling different principal-agent issues being faced by firms (Eisenhardt, 1989).

Keeping in view the findings of multinational enterprises and agency theories, the study formulates the following hypotheses on profitability, firms' size and location to be tested:

H1: Size of the firm is positively related with profitability
H2: The performance of MNFs is better than the performance of DFs

According to Pecking Order Theory (Donaldson, 1961 and Myers & Mailuf, 1984), firms prefer debt over equity in case internal sources are inadequate. WC, if managed efficiently, by late payment to suppliers, quick recovery from customers and efficient use of inventory and shortening CCC will lead to increase in internal funds, thus a firm can increase its value. Since the availability of resources due to efficient management of WC is less costly, there will be less or no need to go for external financing which will further add to the value of a firm. The findings of Palombini and Nakamura (2012) also supports the pecking order theory and suggest that as firms increase their financial leverage, they tend to assume a more restrictive policy in WCM in order to prevent capital consumption in accounts receivable and inventory and to avoid issuing new bonds and shares. Pecking Order Theory essentially indicates that managers have an order of preference in selecting the sources of long term capital to be raised to meet investment or operational needs. Pecking Order Theory is applicable to long term as well as short term financing.

If we consider that WC is that part of the long term funds that are invested in current assets (or operational needs), it becomes clear that managers need to have an order of priority when selecting the means of financing current assets. For instance, if the managers opt for an aggressive WC policy, they are showing their preference for "funds raised from operations, namely current liabilities" to meet their day to day cash flow needs. On the other hand, firms pursuing a conservative WC policy have a preference to finance a larger portion of their current assets out of long term funds. Pecking Order Theory, in its simplest form of application, tells us that managers have their order of preference in selecting sources of finance. It has as much relevance to selecting sources of financing WC needs as for selecting sources to finance fixed assets.

Operating cycle theory advocates calculation of WC requirements on the basis of 'natural business year'. Financing theory states that firms with greater probability of default prefer trade credit instead of cash loan from financial institutions (Wilner 2000). According to liquidity theory, firms having credit constraints prefer trade credit which is avoided by firms having easy approach to cash credit. Easy access to trade credit reduces firms' dependence on cash financing of WC through external sources. WC being an integral part of long term funds invested in current assets requires the preference order of managers while selecting means of financing current assets (also see Myers & Mailuf, 1984).

Testing the trade-off and pecking order theories and using a comprehensive firm-level dataset (including manufacturing, non-manufacturing, small, large, publicly-traded, and private firms), Koksal and Orman (2015) concluded that the trade-off theory provides a better description of the capital structures of all firm types than the pecking order theory. They further found that trade-off theory appears to be particularly suitable for understanding the financing choices of large private firms in the non-manufacturing sector and when the economic environment is relatively stable whereas pecking order theory is most useful when it comes to small publicly-traded manufacturing firms, especially when the economic environment is relatively unstable.

According to Miller and Modigliani (1958), the value of a firm is independent of its capital structure rather it is based on the earning power of the assets currently held and on the size and relative profitability of the investment opportunities. This study analyzes and determines the WCME that comes from the capital structure having both sources of finance i.e., debt and equity as such has more relevance with Miller and Modigliani (M & M) theory of investment. Trade off Theory is all pervasive in financial decisions. Virtually no financial decision is taken without a formal or informal analysis of costs and benefits attached to the alternatives being considered. The static trade-off theory predicts that firms have a target debt ratio (of course including portion of permanent WC), based on tax and bankruptcy considerations. According to Bancel & Mittoo (2004) firms and their managers prefer hedging and trade off between costs and benefits of financing to optimize their capital structures. As such, management may opt for an aggressive or conservative WC approach only after fully considering the trade off, i.e. benefits to be derived from the policy as compared with costs or sacrifices to be made. Thus trade off theory affects WCM decisions.

Based on the findings of pecking order, operating cycle, investment and trade off theories, the following hypotheses on size-wise and location-wise variations in WCME and WC practices of firms are tested:

H3: Small firms utilize WC more efficiently than large firms

H4: MNFs utilize WC more efficiently than DFs

H5: The influence and nature of WC policy varies with firms' size and location

H6: Firms following conservative WC policy yield better financial results.

The following hypotheses on size-wise and location-wise variations in CG practices of firms are also tested, keeping in view the findings of multinational enterprises and agency theories:

H7:   The quality of CG has a positive relationship with firms' performance

H8:   The quality of CG practices varies with size and location of firms

2.5   Summary

As rightly pointed out by Gentry (1988); most of the previous studies analyzed traditional topics such as long term investment, financing and dividend policy decisions etc. giving less attention to the impact of short term investment and financing decisions like WC policy and WCME and that too in a traditional way without providing any scientific proof or any significant creativity in body of knowledge. Besides the influence of CG practices on firms' performance was also used to be measured through a single CG practice before 2001 and CGI was only introduced in 2003 measuring CG quality using a composite CG index (Tariq 2014)   As such literature review shows availability of sufficient cushion for further research in the areas of WCM, WC policy, firms' size, firms' location and CG practices. However the research linking WC policy with firms' performance is very much negligible as no paper is available comprehending all the aspects of each of the three WC policies--aggressive, conservative, and hedging. A common finding of the studies available on analysis of WC is that CCC is the most effective tool to be used as measure of WCME and that it must be inversely associated with firms' performance in order for a firm to increase its profit. Further, efficient firms keep their inventory period as minimum as possible, collect their sales proceeds in the shortest possible time and take long to

pay their accounts payables resulting less WC requirements and vice versa. However, this negative relationship between CCC and firms' performance may not have general applicability and there are certain organizations and areas, where for maximizing the profitability, CCC will have to be increased as suggested by many researchers (Gill et al 2010; Sharma & Kumar 2011; Abuzayed 2012).

The studies on the firms' size referred are in agreement on a positive relationship between firms' size and profitability. Further, firms' size plays an important and a leading role in determining their performance. The overall results of the studies investigating the relationship between WC policy and firms' performance suggest that managers should avoid negative effects on firm performance because of lost sales and lost discounts for early payments or additional financing expenses. Although previous studies thoroughly investigated the impact of short term funds on firms' profitability, the scientific proof regarding the most effective WC approach still needs to be provided.

The studies conducted during 2004-2013 (period also covered by this study) reflect that WCM practices of only large sized firms were analyzed in developing countries like Pakistan and analysis of medium and small sized firms has not been addressed adequately. It is also found from review of literature that a very limited number of studies have directed their research towards finding the factors responsible for variation in WCM efficiencies among various categories of firms on the basis of size, location and WC strategies. These studies have analyzed these factors individually i.e.; a study analyzed a single factor. Most of the existing literature reveals a positive relationship of firms' size and negative relationship of CCC with profitability. Previous research also indicates that MNFs are financially and operationally stronger than DFs. These studies found an important role of board size (and also other CG practices) in determining firms' performance as well as a positive relationship between the magnitude of agency problem and firm size. Specifically the studies investigating phenomenon from various dimensions like ours is not available at all. In this research, we present location-wise and size-wise analysis of firms' performance.

Overall literature review indicates that most of these studies are country specific not necessarily applicable to other countries. Since the sample size used in this study consists of a substantial

number (26.80%) of MNFs working throughout the world, the results of the study will definitely have relevance for international corporate sector particularly developing countries.

3 METHODOLOGY

This chapter contains data type, sample size, sources of data, criteria used for categorizing firms, variables, calculation of variables, calculation of CGI, models, tests and software used in the study. The study has addressed WCM issue in a different way as against the traditional approach. Previous studies have determined the impact of WCM components on the profitability of firms whereas this study investigates various factors responsible for WCME problem through categorizing firms on the basis of location such as domestic and multinationals as well as size such as small, medium and large. Besides, CGI has been added as a comprehensive variable to see the relationship of CG practices with firms' size and location. Models are developed incorporating all the variables used in the study.

3.1 A Brief Description of Pakistani Stock Market

A stable and diversified stock market is vital for the economic uplift of any country and the same holds true for Pakistan. An efficient stock market plays an important role in covering the gap between surplus and deficit economic units. This role of stock market makes a stock exchange responsible to generate funds for investing in economically viable projects. Previously Pakistani stock market comprised of three stock exchanges namely Karachi Stock Exchange, Lahore Stock Exchange and Islamabad Stock Exchange. However, with effect from January 11, 2016 all these stock exchanges were integrated under the Stock Exchanges (Corporatization, Demutualization and Integration) Act, 2012 to form the Pakistan Stock Exchange Limited as the only stock exchange in Pakistan. As on September 14th, 2016 there were 577 companies listed in Pakistan Stock Exchange representing 35 sectors having total market capitalization of Rs. 8,079.598 billions

3.2 Data

A brief description regarding various aspects of the data used in the study is as under:

3.2.1 Population

Population for this study contains all the manufacturing firms listed on PSE. Financial firms are excluded because of different nature of products they deal in (money and related instruments) whereas trading firms are excluded because their inventory consists only of finished goods making their WCM process unique as compared to a normal CCC.

3.2.2 Sample

Sample consists of 153 firms for ten economic groups namely textiles, sugar, chemicals & pharmaceuticals, fuel & energy, autos & engineering, FMCGs (Fast Moving Consumer Goods) & foods, cement, paper & board, tobacco and jute. Out of 153 firms, 112 (73.20 %) are domestic and 41 (26.80 %) are multinationals. The sample excludes firms the industrial average (IA) of which is not available. Thus a balanced panel data set of 1,530 firm-year observations has been used in the study.   Data has been arranged and presented in pooled form combining time series and cross sectional observations. Time series in the study presents firms-wise determination of WC policy, WCME, CGI and firm's performance measured by calculating various ratios for the entire period of study. Cross sectional data covers determination of these variables (WC policy, WCME, CGI and firm's performance) by calculating different ratios separately for each year under review. Industry-wise distribution of sample firms is given in table 3-1 below:

Table 3-1: Industry-Wise Distribution of Sample Firms*

Industry	Location-Wise Distribution		Size-Wise Distribution			Total firms
	DFs	MNFs	Small	Medium	Large	
Textiles	35	0	20	13	2	35
Sugar	16	0	8	8	0	16
Chemicals and Pharmaceuticals	14	14	10	10	8	28
Fuel and Energy	14	5	0	5	14	19
Autos and Engineering	8	12	2	11	7	20
FMCGs, Foods and Allied	5	5	0	4	6	10
Cement	13	1	0	8	6	14
Paper and Board	4	2	3	2	1	6
Tobacco	1	2	1	0	2	3
Jute	2	0	2	0	0	2
Total firms	112	41	46	61	46	153

* Details given in appendix II to IV

3.2.3 Period Covered

Period covered in the study is ten years from 2004 to 2013 considering availability of data.

3.2.4 Sources of Data

Data has been collected mainly from secondary sources. Main sources of data collection include:

1. State Bank of Pakistan's document, Balance Sheet Analysis of Joint Stock Companies
2. Annual reports of firms
3. Pakistan Stock Exchange

3.3 Procedure Used for Categorization of Firms

Keeping in view the gap available in existing research, this study uses location and size as a base to categorize firms. The criteria used for such classification of firms are given below:

3.3.1 Classification of Firms on the Basis of Size

Available literature reveals many bases used for determining firm size such as sales (Al-Mwalla, 2012), assets (Hansen and Birger, 1989, Tariq & Abbas 2013, MC (Fama & French 1992; Connor & Sehgal 2001; Mirza & Shahid 2008; Mirza & Afzal 2011), number of employees, age of firm and number of owners/shareholders (Dalbor, 2004).

To get reliable results by avoiding time value of money problem, this study uses MC for determining the size of firm. MC is calculated as number of shares outstanding multiplied by closing market price per share of each year under review (2004-2013). Following previous studies (Connor & Sehgal 2001; Mirza & Shahid 2008; Mirza & Afzal 2011), after arranging all firms in ascending order on the basis of MC, top 30% are classified as small, middle 40% as medium and bottom 30% as large.

3.3.2 Classification of Firms on the Basis of Location

Location used in this study shows ownership, control and operation of a firm. A firm is considered to be a multinational if it is a joint venture of two or more countries, has a technical collaboration with a foreign country or operates in more than one country. A domestic firm is

one which is owned, controlled and operated by Pakistani citizen (s). Dummy variables have been used as '0' for DFs and '1' for MNFs.

3.4 Variables Used in the Study

Variables are calculated as under:

3.4.1 Firms' Performance

Profitability has been measured in various ways by the researchers estimating different factors responsible for variations in firms' performance (referred 2.3.1). It is still not clear how to evaluate performance of an organization and what are the specific factors influencing the performance measurements. However all the measurements used in the previous studies are truly representing firms' performance though with different magnitudes. This study uses the following two profitability measures:

a) Return on assets

Padachi (2006) used return on assets to measure firms' performance. To determine book value based performance of the firm, this study calculates return on assets (ROA) using the following formula:

$$ROA = \frac{Net\ profit}{Total\ assets} \times 100 \qquad (3\text{-}1)$$

The higher the ROA, the better is the management. However it is useful for comparing firms having the same level of capitalization. ROA of trading firms (having no huge capital-intensive assets) is normally better than manufacturing firms (having huge capital-intensive assets) as such the results based on ROA will be biased. Therefore the entire sample used in the study consists of manufacturing firms

b) Market to Book Ratio

Previous studies (Whited, & Erickson 2001; Perfect & Wiles 1994) reveal use of market to book ratio (MBR) as proxy of Tobin's Q (TQ) value. Perfect and Wiles (1994) show that TQ and MBR are highly correlated (the correlation coefficient is approx 0.96). These studies therefore

applied their results to TQ also. To determine market based performance of the firm, this study calculates MBR using the following formula:

$$MBR = \frac{\text{Total market value of firm}}{\text{Shareholder's equity}} \qquad (3\text{-}2)$$

3.4.2 Working Capital Policy

As evident from previous studies (VanHorne & Wachowicz, 2009; Brigham & Houston, 2013), the three WC strategies in practice are (a) hedging WC policy; a method of financing where each asset is offset with a financing instrument of the same approximate maturity, (b) conservative WC policy; using long term funds to finance short term assets and (c) aggressive WC policy defined as an approach using short term funds to finance fixed assets or permanent WC. The liquidity ratios represent the WC policy and the higher these are; the more conservative the WC policy is (Afza & Nazir 2008, Nazir & Afza 2009). Thus the lower ratios represent aggressive WC policy and moderate ratios will show hedging approach. The liquidity ratios used in this study as proxies of WC policy are:

a) Current Ratio

The following formula is used to calculate current ratio (CR):

$$CR \quad = \quad \frac{\text{Current assets}}{\text{Current liabilities}} \qquad (3\text{-}3)$$

b) Acid Test Ratio

To cover the cushion available in existing research, acid test ratio (ATR) is added as a liquidity measure calculated as:

$$ATR \quad = \quad \frac{\text{Current assets-Inventory}}{\text{Current liabilities}} \qquad (3\text{-}4)$$

c) Cash Ratio

For determining liquidity policy, cash ratio (CAR) is considered to be a good proxy also been used in literature. CAR has been calculated as:

$$CAR \quad = \quad \frac{\text{Cash and bank balances}}{\text{Current liabilities}} \qquad (3\text{-}5)$$

3.4.3 Firms' Location

As already mentioned in section 2.3.3, the term location in the study is a euphemism for firms' origin, represented by Dummy for DFs and MNFs (DDM). Using dummies, '0' is assigned to DFs and '1' to MNFs

3.4.4 Firms' Size

MC is used to determine the size of firm calculated as number of outstanding shares multiplied by market price per share.

3.4.5 Working Capital Management Efficiency

Like many other studies (Richards & Laughlin 1980; Gentry et al 1990; Deloof 2003), this study uses CCC for determining WCME. The longer the CCC, the larger the funds blocked in WC (Padachi 2006). Following Deloof (2003) and many others, CCC has been calculated as:

$$CCC \; = \; (\text{Inventory turnover in days} + \text{Receivable turnover in days}) - \text{Payable turnover in days}$$
$$(3\text{-}6)$$

3.4.6 Governance Variables

Following previous studies (Tariq & Abbas 2013; Shah 2009), this study uses a composite CGI to measure the quality of CG. Likert scale (Likert, 1932: 5-55) is used to award numerical value to each CG practice. Score awarding criteria is given in table 3-2.

Table 3-2: Calculation of CGI

CG category	Scoring Criteria	
	Range	**Score**
Board size	8-10 members	5
	Above 10 and below 8 members (up to 7)	4
	6 members	3
	4-5 members	2
	4 members	1
Non executive directors	75% and above of the board size	5
	65-74%	4
	55-64%	3

	45-54%	2
	Below 45%	1
Presence of chief financial officer on the board	If chief financial officer is on the board	5
	If chief financial officer is not on the board	1
Gender distribution	40% or above female directors on the board	5
	30-39% female directors on the board	4
	20-29% female directors on the board	3
	10-19% female directors on the board	2
	Less than 10% female directors on the board	1
Number of board meetings	8 meetings or above a year	5
	7 meetings a year	4
	6 meetings a year	3
	5 meetings a year	2
	4 meetings or less a year	1
Number of audit committee meetings	8 meetings or above a year	5
	7 meetings a year	4
	6 meetings a year	3
	5 meetings a year	2
	4 meetings or less a year	1

After determining the numerical value of each CG practice, the following formula is used to calculate CGI:

$$\text{CGI} = \frac{\text{Sum of weightage given to all CG practices}_{(2004-20013)}}{\text{Data period (in years)}}$$

(3-7)

3.4.7 Sales growth (SG)

Since a control variable highly affects values; it is very important to hold it constant to determine the relative impact of independent variables. SG is calculated as:

$$SG = \frac{\text{Current year's sales} - \text{Previous year's sales}}{\text{Previous year's sales}} \qquad (3\text{-}8)$$

All the dependent and independent variables are compared with their respective ten year industrial average as explained against each one (Lev & Sunder 1979; Singh 2011; Najjar 2013)

3.5 The Model

Following previous studies (Luo & Tan 1998; Connor & Sehgal 2001; Deloof 2003), the relationship between dependent and independent variables is estimated using the following general pooled regression model:

$$\text{Yit} = \beta 0 + \sum_{i=1}^{n} \beta i X i + \varepsilon \qquad \text{Model 1}$$

Where

Y   Dependent variable and indicates firms' performance measured using ROA and MBR

β0   Constant

βi   Parameters

Xi   ith independent and control variable

ε   Error term

Firms' performance is determined using ROA as a book value based measure and MBR as market value based measure. To estimate the impact of all the independent variables on dependent variables individually and jointly, separate models are developed as explained below:

3.5.1 Firms' Performance Based on Return on Assets

ROA is a book value based ratio and indicates efficiency of a firm to use its assets for generating earnings. It is calculated as net income divided by total assets. A firm uses both debt and equity to acquire total assets and fund the operations of the firm. Thus ROA is a measure of

profitability in relationship with total investment whether it is in current or fixed assets. To measure the impact of independent variables on firm performance, the following pooled OLS models are used:

$$\text{RoA}_{it} = \beta 0 + \beta 1 \text{ (CR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}9)$$

$$\text{ROA}_{it} = \beta 0 + \beta 1 \text{ (ATR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}10)$$

$$\text{ROA}_{it} = \beta 0 + \beta 1 \text{ (CAR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}11)$$

Where:

ROA   A book value based proxy of firms' performance (dependent variable)

CR   Current ratio used as proxy of WCM policy (independent variable)

ATR   Acid test ratio used as proxy of WCM policy (independent variable)

CAR   Cash ratio used as proxy of WCM policy (independent variable)

MC   Market capitalization used as proxy of firm's size (control variable)

DDM   Dummy for DFs and MNFs (control variable)

CCC   A proxy for WCME (control variable)

CGI   CG index used to measure the quality of CG (control variable)

SG   Sales growth (control variable)

3.5.2   Firms' Performance Based on Market to Book Ratio

This ratio is also called the price to book ratio and measures the market value of a firm relative to its book or accounting value. To measure the impact of independent variables on firm performance, the following pooled OLS models are used:

$$\text{MBR}_{it} = \beta 0 + \beta 1 \text{ (CR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}12)$$

$$\text{MBR}_{it} = \beta 0 + \beta 1 \text{ (ATR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}13)$$

$$\text{MBR}_{it} = \beta 0 + \beta 1 \text{ (CAR)} + \beta 2 \text{ (MC)} + \beta 3 \text{ (DDM)} + \beta 4 \text{ (CCC)} + \beta 5 \text{ (CGI)} + \beta 6 \text{ (SG)} + \varepsilon \qquad (3\text{-}14)$$

Where MBR indicates market based proxy of firms' performance. The rest of the variables are those used in equations from 3-9 to 3-11. These models are in line with those used by Deloof (2003) and Padachi (2006). Deloof (2003) investigated the relationship between WCM and corporate profitability by using gross operating income as dependent variable, CCC as independent variable and firm size, SG, financial debt ratio and the ratio of fixed financial assets

to total assets as control variables.   Padachi (2006) used return on total assets as dependent variable, CCC as independent variable and firm size, gearing ratio, the gross WC turnover ratio and the Ratio of Current Assets to Total Assets as control variables to measure the impact of WCM on corporate profitability of manufacturing firms.

Schematic diagram for the factors affecting firms' performance using both ROA and MBR as performance measure is given in figure 3-1.

Figure 3-1: Factors Affecting Firms' Performance
This figure explains the schematic diagram indicating the relationship between dependent and independent variables

Independent and control variables
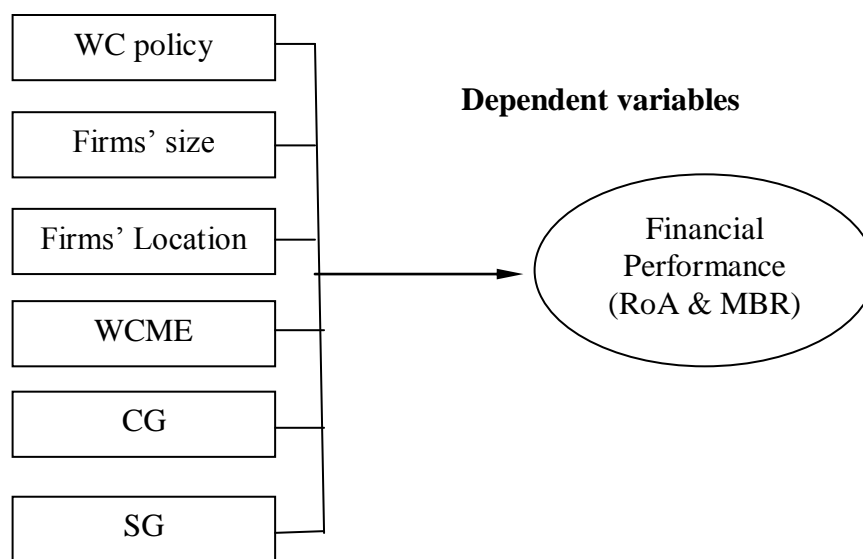
3.6   Software Used

The following software are used in the study:

    a) E-Views 9

    b) SPSS 24

3.7 Methodological Debate

Most of the previous studies have used a single measure such as ROA, return on equity (ROE) or TQ for evaluating firms' performance (Sharpe 1964; Fama & French 1992; Deloof 2003; Connor & Sehgal 2001; Padachi 2006). However, in order to get more reliable results and mutually counter check these results, both ROA (a book value based profitability measure) and MBR (a market value based profitability measure) are used as proxies of firms' performance. Methodology used for determining various dimensions to analyze sample firms is also different from previous studies in the sense that this study analyzes firms' performance both on the basis of size and location as contrary to the previous studies analyzing firms on the basis of a single dimension that is either size, (Al-Mwalla 2012; Hansen & Birger 1989), age (Dalbor, 2004) or location (Rugraff & Hansen 2011; Noorderhaven & Harzing 2003) etc.

As far as sample selection is concerned, it consists of 153 firms although seems small for PhD thesis, however selected on disproportionate stratified random sampling basis giving proper representation to each economic group in the sample. Furthermore, stratification is an efficient research design providing more information with a given sample size and meet the assessment requirements of each stratum in the universe. Moreover, it contains 73.20% domestic and 26.80 % multinational firms making the sample more balanced for deriving results. Excluding firms having no industrial average is another possible reason for restricting sample size to 153. Another positive side of the data is its arrangement and presentation in pooled form combining time series and cross sectional observations.

3.8 Summary

A balanced data set of 153 firms listed on PSE for a period covering 2004-2013 is selected on disproportionate stratified random sampling basis. Data set includes 73.20% DFs and 26.80% MNFs. Size-wise break up shows 30% small, 40% medium and 30% large firms. Data has been analyzed using SPSS and Eviews. Firms are categorized on the basis of size and location. ROA and MBR are used as dependent variables. Independent variables include CR, ATR, CAR (WC policy). MC (size), DDM (location), CCC (WCME), CGI (quality of CG) and SG are used as control variables.

4 RESULTS AND DISCUSSION

The study is carried out using accounting, statistical and regression techniques. Ratio analysis is used as accounting technique and explained in section 4.1. Statistical techniques used in the study consist of descriptive and correlation analyses presented in sections 4.2 and 4.3 respectively. As regression techniques, the study uses multivariate and multinomial logistic regression analyses detailed in sections 4.4 and 4.5 respectively.

4.1 Ratio Analysis

This section presents ratio analysis of the sample firms. A ratio is used to express one item of financial statements of a business concern in terms of another item to present the financial data into a simple and meaningful way. Ratio analysis is an effective technique used to evaluate a firm's operating and financial performance such as its efficiency, liquidity, profitability and solvency. In order to get reliable results and overcome the difficulty in finding an appropriate standard (yardstick), ratios are calculated across firms in the same sector and compared with relevant industrial and sample averages to ascertain firms' performance, WCME, WC policy and quality of CG.

4.1.1 Firms' Performance

ROA and MBR are used as proxies of firms' performance. Averages of these ratios for all firms of the same sector are compared with the industrial and sample averages used as bench marks. A firm is considered to be a good performer, if its average performance is equal to or more than IA or SA of the concerned sector. On the contrary, a firm is considered to be a weak performer, if its average performance is less than the IA or SA of the concerned sector or is negative (even if it is more than IA or SA). A comparison of these ratios with industrial and sample averages is reported in table 4-1.

Table 4-1: Performance-Wise Distribution of Firms

Data Segment	Performance Indicator	Bench Mark	Good Performers		Weak Performers		Total	
			No.	%	No.	%	No.	%
Small firms	ROA	IA	14	30	32	70	46	100
		SA	14	30	32	70	46	100
	MBR	IA	10	22	36	78	46	100
		SA	10	22	36	78	46	100
Medium firms	ROA	IA	30	49	31	51	61	100
		SA	27	44	34	56	61	100
	MBR	IA	22	36	39	64	61	100
		SA	18	30	43	70	61	100
Large firms	ROA	IA	31	67	15	33	46	100
		SA	31	67	15	33	46	100
	MBR	IA	33	72	13	28	46	100
		SA	25	54	21	46	46	100
DFs	ROA	IA	54	48	58	52	112	100
		SA	45	40	67	60	112	100
	MBR	IA	47	42	65	58	112	100
		SA	37	33	75	67	112	100
MNFs	ROA	IA	21	51	20	49	41	100
		SA	27	66	14	34	41	100
	MBR	IA	18	44	23	56	41	100
		SA	16	39	25	61	41	100
All firms	ROA	IA	75	49	78	51	153	100
		SA	72	47	81	53	153	100
	MBR	IA	65	42	88	58	153	100
		SA	53	35	100	65	153	100

As reported in table 4-1, size-wise comparison with industrial and sample averages shows an increasing trend in performance with an increase in size indicating a key role of firms' size in determining firms' performance. Keeping IA as the bench mark and ROA as the performance measure, the percentage of good performing firms is 30 in small firms as compared to 49 and 67 in medium and large firms respectively. Whereas, keeping MBR as the performance measure, the percentage of good performing firms in small firms is 22 as compared to 36 and 72 in medium and large firms respectively. The trend prevailing in size-wise analysis of firms based on IA is also observed keeping SA as bench mark. Keeping SA as the bench mark, based on ROA, the percentage of good performing firms is 30 in small firms as compared to 44 and 67 in medium and large firms respectively whereas based on MBR as the performance measure, the percentage of good performing firms in small firms is 22 as compared to 30 and 54 in medium

and large firms respectively. This trend shows a positive relationship between firms' size and performance.

Keeping IA as bench mark, good performing firms in DFs constitute 48% as compared to 51% in MNFs based on ROA whereas 42% DFs are good as compared to 44% in MNFs based on MBR. Keeping SA as bench mark, the percentage of good performers in DFs is 40 as compared to 66 in MNFs based on ROA whereas 33% DFs are good as compared to 39% in MNFs based on MBR. This trend shows better performance of MNFs as compared to DFs supporting our hypothesis 2 that "The performance of MNFs is better than the performance of DFs".

Considering sample as a whole, keeping ROA as profit measure and IA as bench mark, 49% firms are good and 51% are weak whereas having SA as bench mark, 47% firms are good and 53% weak. Keeping MBR as profit measure and IA as bench mark, 42% firms are good and 58% are weak whereas having SA as bench mark, 35% firms are good and 65% weak. This trend shows that overall corporate sector of Pakistan is financially weak.

Significance of the segment-wise difference in financial performance of firms is also verified using t-test (table 4-2).

Table 4-2: Segment-Wise T values at 95% Confidence Level

Data Segment	Performance Indicator	Bench Mark	T value	Significance
Small firms	ROA	IA	-4.288	0.000
		SA	-5.620	0.000
	MBR	IA	-4.50	0.000
		SA	-4.014	0.000
Medium firms	ROA	IA	-1.017	0.313
		SA	-6.876	0.000
	MBR	IA	-3.453	0.001
		SA	-2.935	0.005
Large firms	ROA	IA	-4.611	0.000
		SA	-4.370	0.000
	MBR	IA	-1.176	0.246
		SA	-2.460	0.018
DFs	ROA	IA	-7.538	0.000
		SA	-8.747	0.000
	MBR	IA	-2.300	0.027
		SA	-6.246	0.000
MNFs	ROA	IA	-5.416	0.000

			SA	-4.631	0.000
	MBR		IA	-2.300	0.027
			SA	-3.158	0.003
All firms	ROA		IA	-8.893	0.000
			SA	-10.492	0.000
	MBR		IA	-5.247	0.000
			SA	-5.540	0.000

T-values reported in table 4-2 indicate that there is a significant difference between good and weak performances on bases of both ROA and MBR when data is analyzed 'as a whole' comparing with both industrial and sample averages. In case of small firms, it is significant both on the bases of ROA and MBR and comparing with both industrial and sample averages. In case of medium firms, it is significant comparing with industrial and sample averages based on MBR however based on ROA, it is significant comparing with SA and insignificant comparing with IA.   In case of large firms, it is significant comparing with industrial and sample averages based on ROA however based on MBR, it is significant comparing with IA and insignificant comparing with SA. Location-wise results show significant difference on the bases of both ROA and MBR in DFs as well as MNFs comparing with both industrial and sample averages.

4.1.2   Working Capital Policy

CR, ATR and CAR are used as proxies of WC policy. Averages of all these variables for the period under review are compared with their respective industrial and sample averages used as bench marks. Firms with ratios more than IA or SA are considered to be following conservative WC policy, equal to IA or SA are considered to be following hedging approach of WCM and firms with less than IA or SA are grouped as following aggressive approach. The results are reported in table 4-3.

Table 4-3: Comparison of WC policy Components with Industrial and Sample Averages

Data segment	Ratio	Bench Mark	Aggressive		Hedging		Conservative		Total	
			No.	%	No.	%	No.	%	No.	%
Small firms	CR	IA	25	54	0	0	21	46	46	100
		SA	36	78	0	0	10	22	46	100
	ATR	IA	36	78	0	0	10	22	46	100
		SA	36	78	1	2	9	20	46	100
	CAR	IA	32	70	0	0	14	30	46	100
		SA	37	80	0	0	9	20	46	100
Medium firms	CR	IA	26	43	2	3	33	54	61	100

		SA	40	66	0	0	21	34	61	100
	ATR	IA	42	69	0	0	19	31	61	100
		SA	41	67	0	0	20	33	61	100
	CAR	IA	39	64	0	0	22	36	61	100
		SA	37	80	0	0	9	20	46	100
Large firms	CR	IA	15	33	0	0	31	67	46	100
		SA	25	54	0	0	21	46	46	100
	ATR	IA	17	37	0	0	29	63	46	100
		SA	24	52	0	0	22	48	46	100
	CAR	IA	18	39	0	0	28	61	46	100
		SA	25	54	1	2	20	44	46	100
DFs	CR	IA	52	46	2	2	58	52	112	100
		SA	80	71	0	0	32	29	112	100
	ATR	IA	78	70	0	0	34	30	112	100
		SA	79	70	1	1	32	29	112	100
	CAR	IA	69	62	0	0	43	38	112	100
		SA	88	79	0	0	24	21	112	100
MNFs	CR	IA	14	34	0	0	27	66	41	100
		SA	21	51	0	0	20	49	41	100
	ATR	IA	17	41	0	0	24	59	41	100
		SA	22	54	0	0	19	46	41	100
	CAR	IA	20	49	0	0	21	51	41	100
		SA	24	59	1	2	16	39	41	100
All firms	CR	IA	63	43	2	1	88	56	153	100
		SA	101	66	0	0	52	34	153	100
	ATR	IA	95	62	0	0	58	38	153	100
		SA	101	66	1	1	51	33	153	100
	CAR	IA	89	58	0	0	64	42	153	100
		SA	112	73	1	1	40	26	153	100

Keeping IA as bench mark, small firms following aggressive policy constitute 54%, 78% and 70% based on CR, ATR and CAR respectively. No small firm is following hedging approach while firms following conservative policy are 46% based on CR, 22% on the basis of ATR and 30% on the basis of CAR. Medium firms following aggressive policy constitute 43%, 69% and 64% based on CR, ATR and CAR respectively. Firms following hedging approach are 3%, 0% and 0% while firms following conservative policy are 54% based on CR, 31% on the basis of ATR and 36% on the basis of CAR. Large firms following aggressive policy constitute 33%, 37% and 39% based on CR, ATR and CAR respectively. No large firm is following hedging approach while firms following conservative policy are 67% based on CR, 63% on the basis of ATR and 61% on the basis of CAR. The percentage of aggressive WC policy is highest in small and medium firms as compared to hedging and conservative WC policies. The percentage of conservative WC policy is highest in large firms as compared to aggressive and hedging WC

policies. Thus small and medium firms follow aggressive WC policy while large firms follow conservative WC policy keeping IA as bench mark as evident from the ratio among all the three approaches of WC.

Keeping SA as bench mark, small firms following aggressive policy constitute 78%, 78% and 80% based on CR, ATR and CAR respectively. Firms following hedging approach are 0%, 2% and 0% while firms following conservative policy are 22% on the basis of CR, 20% based on ATR and 20% based on CAR. Medium firms following aggressive policy constitute 66%, 67% and 82% based on CR, ATR and CAR respectively. No medium firm follows hedging approach while firms following conservative policy are 34% on the basis of CR, 33% based on ATR and 18% based on CAR. Large firms following aggressive policy constitute 54%, 52% and 54% based on CR, ATR and CAR respectively. Firms following hedging approach are 0%, 0% and 2% while firms following conservative policy are 46% on the basis of CR, 48% based on ATR and 44% based on CAR. The percentage of aggressive WC policy is highest in all sizes of firms viz. small, medium and large as compared to hedging and conservative WC policies. Thus all sizes of firms follow aggressive WC policy keeping SA as bench mark as evident from the ratio among all the three approaches of WC.

Keeping IA as bench mark, DFs following aggressive policy constitute 46%, 70% and 62% based on CR, ATR and CAR respectively. On the basis of CR, 2% DFs are following hedging approach whereas based on ATR and CAR no DF follows hedging WC policy. DFs following conservative policy are 52% on the basis of CR, 30% on the basis of ATR and 38% based on CAR. MNFs following aggressive policy constitute 34%, 41% and 49% based on CR, ATR and CAR respectively. No MNF is following hedging approach while firms following conservative policy are 66% on the basis of CR, 59% based on ATR and 51% on the basis of CAR. Thus DFs follow aggressive approach while MNFs follow conservative WC policy keeping IA as bench mark as evident from the ratio among all the three approaches of WC.

Keeping SA as bench mark, DFs following aggressive policy constitute 71%, 70% and 79% based on CR, ATR and CAR respectively. On the basis of ATR, 1% DFs follow hedging approach whereas based on CR and CAR no DF follows hedging WC policy. DFs following conservative policy are 29% on the basis of CR, 29% on the basis of ATR and 21% on the basis

of CAR. MNFs following aggressive policy constitute 51%, 54% and 59% based on CR, ATR and CAR respectively. On the basis of CAR, 2% MNFs are following hedging approach whereas based on CR and ATR no MNF follows hedging WC policy. MNFs following conservative policy are 49% based on CR, 46% based on ATR and 39% on the basis of CAR. The percentage of aggressive WC policy is greater in both DFs and MNFs as compared to hedging and conservative WC policies. Thus both DFs and MNFs follow aggressive WC policy keeping SA as bench mark as evident from the ratio among all the three approaches of WC.

Analyzing 'all firms' data and keeping IA as bench mark, firms following aggressive policy constitute 43%, 62% and 58% based on CR, ATR and CAR respectively. On the basis of CR, 1% firms are following hedging approach whereas based on ATR and CAR no firm follows hedging WC policy. Firms following conservative policy are 56% based on CR, 38% based on ATR and 42% on the basis of CAR. The percentage of aggressive WC policy is highest based on ATR and CAR as compared to hedging and conservative WC policies (appendix V). Keeping SA as bench mark, firms following aggressive policy constitute 66%, 66% and 73% based on CR, ATR and CAR respectively. Both on the basis of ATR and CAR, 1% firms are following hedging approach whereas based on CR no firm follows hedging WC policy. Firms following conservative policy are 34% on the basis of CR, 33% on the basis of ATR and 26% based on CAR. The percentage of aggressive WC policy is highest based on all the liquidity ratios as compared to hedging and conservative WC policies (appendix-VI). .

Summing up the discussion on WC policy and using IA as the bench mark (the reason being it is developed on the basis of complete data from the concerned industry and seems more reliable as compared to SA), domestic, multinational, small and medium firms follow aggressive approach whereas large firms follow conservative WC policy. Based on location 100% (both DFs and MNFs) and based on size 70% (only small and medium) firms are following aggressive WC policy lead us to the conclusion that overall corporate sector of Pakistan follow aggressive WC policy.

4.1.3 Working Capital Management Efficiency

The study uses CCC as a comprehensive variable to represent WCME. Average CCC of each firm for the data period is compared with industrial and sample averages. All firms maintaining

average CCCs less than IA or SA, are considered to be managing their WC efficiently. Firms having average CCCs equal to or more than IA or SA are deemed to be managing their WC inefficiently. This comparison is given in table 4-4.

Table 4-4: Comparison of WCME with Industrial & Sample Averages

Data segment	Benchmark	Efficient firms		Less efficient firms		Total	
		No.	%	No.	%	No.	%
Small firms	IA	17	37	29	63	46	100
	SA	24	52	22	48	46	100
Medium firms	IA	13	21	48	79	61	100
	SA	24	39	37	61	61	100
Large firms	IA	9	20	37	80	46	100
	SA	22	48	24	52	46	100
DFs	IA	32	29	80	71	112	100
	SA	53	47	59	53	112	100
MNFs	IA	7	17	34	83	41	100
	SA	17	41	24	59	41	100
All firms	IA	39	25	114	75	153	100
	SA	70	46	83	54	153	100

Size-wise analysis (table 4-4) shows that small firms manage their WC more efficiently than their larger counterparts. Based on IA, the percentage of efficient firms in small firms is 37 which is higher than both medium (21%) and large firms (20%). Based on SA, the percentage of efficient firms in small firms is 52 which again is higher than both medium (39%) and large firms (48%).

Location of a firm plays a key role in determining its WCME as reported in table 4-4. Comparison of WCME between DFs and MNFs both on the basis of industrial and sample averages indicates that DFs manage their WC more efficiently than MNFs. On the basis of IA, efficient firms are 29% in DFs and 17% in MNFs. On the basis of SA, this percentage is 47 and 41 in DFs and MNFs respectively.

Overall efficient firms are 25% and less efficient firms are 75% on the basis of IA. Based on SA, efficient firms are 46% and less efficient firms are 54%. This indicates that Pakistani corporate sector is weak in utilizing its WC. Possible reasons for weak utilization of WC by Pakistani firms are inclusion of MNFs in sample (having weak WC practices as compared to DFs), slow process of loan process by banks, high variability in WCM efficiencies, weak CG practices, poor accounting system and weak audit system.

4.1.4 Quality of Corporate Governance

Quality of CG is measured using CGI. Since IA is not available to be used as bench mark for assessing the quality of CG, it has been assessed on the basis of SA. Averages of all CG indices (CGIs) for the period under review are compared with their respective sample averages used as bench marks. Firms with CGIs equal to or more than sample averages are considered to be having good CG practices and those having CGIs less than sample averages or negative (even if these are more than sample averages), are considered to be having weak CG practices. The results are reported in table 4-5.

Table 4-5: Distribution of Firms According to the Quality of CG

Data segment	Good Governance		Weak Governance		Total	
	No.	%	No.	%	No.	%
Small firms	20	43	26	57	46	100
Medium firms	13	21	48	79	61	100
Large firms	9	20	37	80	46	100
DFs	37	33	75	67	112	100
MNFs	5	12	36	88	41	100
Large DFs	6	29	15	71	21	100
All firms	42	27	111	73	153	100

As reported in table 4-5, both location and size plays a vital role in determining the quality of governance. Size-wise analysis indicates that 43% of small, 21% of medium and 20% of large firms are following good governance. Location-wise results show that 33% of DFs and 12% of MNFs are following good governance practices. Overall, the governance of 27% firms is good and 73% is weak indicating generally weak CG in Pakistani corporate sector.

4.2 Descriptive Analysis

Table 4-6 reports descriptive statistics for overall corporate sector of Pakistan on the basis of ROA and MBR. Using ROA as profit measure, corporate sector of Pakistan indicates volatility whereas based on MBR it shows stability. A high downward deviation of firms' size from the mean in both cases (ROA and MBR) is due to a large number of small and medium firms (approximately 70%) in sample. Mean DDM of 0.27 with a standard deviation (SD) of 0.44

indicates a substantial and stable stake of foreign shareholding in Pakistani corporate sector. At an average, a firm takes 45.18 days to convert raw material into cash. An SD of 151.92 indicates high variability in WCM efficiencies among firms. Means of WC policy variables (CR, ATR, and CAR) ranges from 0.25 to 1.44 whereas SDs varies between 0.27 and 1.20 indicating stability and reliability of WC policy. Mean CGI of 2.32 being above SA (2.22) indicates better CG however comparing with SD of 0.45 shows volatility among CG practices of firms.

Table 4-6: Descriptive Statistics 'All firms'

Variable	Profit measure	WC policy variable	Mean	SE	Median	SD	Skew
Firms' performance	ROA	CR	8.88	0.40	6.23	15.73	2.36
		ATR	8.88	0.40	6.23	15.73	2.36
		CAR	8.88	0.40	6.23	15.73	2.36
	MBR	CR	1.65	0.09	0.89	3.40	4.85
		ATR	1.65	0.09	0.89	3.40	4.85
		CAR	1.65	0.09	0.89	3.40	4.85
WC policy variable	ROA	CR	1.44	0.03	1.08	1.20	2.86
		ATR	0.89	0.03	0.58	1.01	3.53
		CAR	0.25	0.02	0.04	0.79	11.41
	MBR	CR	1.43	0.03	1.08	1.20	2.86
		ATR	0.89	0.03	0.58	1.01	3.53
		CAR	0.25	0.02	0.04	0.79	11.41
MC	ROA	CR	14.21	2.67	0.94	104.41	25.33
		ATR	14.21	2.67	0.94	104.41	25.33
		CAR	14.21	2.67	0.94	104.41	25.33
	MBR	CR	14.21	2.67	0.94	104.45	25.33
		ATR	14.21	2.67	0.94	104.45	25.33
		CAR	14.21	2.67	0.94	104.45	25.33
DDM	ROA	CR	0.27	0.01	0.00	0.44	1.05
		ATR	0.27	0.01	0.00	0.44	1.05
		CAR	0.27	0.01	0.00	0.44	1.05
	MBR	CR	0.27	0.01	0.00	0.44	1.05
		ATR	0.27	0.01	0.00	0.44	1.05
		CAR	0.27	0.01	0.00	0.44	1.05
CCC	ROA	CR	45.18	3.88	53.60	151.92	-1.64
		ATR	45.18	3.88	53.60	151.92	-1.64
		CAR	45.18	3.88	53.60	151.92	-1.64
	MBR	CR	45.18	3.88	53.60	151.92	-1.64
		ATR	45.18	3.88	53.60	151.92	-1.64
		CAR	45.18	3.88	53.60	151.92	-1.64
CGI	ROA	CR	2.32	0.01	2.33	0.45	1.76
		ATR	2.32	0.01	2.33	0.45	1.76
		CAR	2.32	0.01	2.33	0.45	1.76

	MBR	CR	2.32	0.01	2.33	0.45	1.76
		ATR	2.32	0.01	2.33	0.45	1.76
		CAR	2.32	0.01	2.33	0.45	1.76
SG	ROA	CR	0.21	0.02	0.14	0.74	8.44
		ATR	0.21	0.02	0.14	0.74	8.44
		CAR	0.21	0.02	0.14	0.74	8.44
	MBR	CR	0.21	0.02	0.14	0.74	8.44
		ATR	0.21	0.02	0.14	0.74	8.44
		CAR	0.21	0.02	0.14	0.74	8.44

Location-wise descriptive statistics are presented in table 4-7. Based on ROA, Pakistani corporate sector shows volatile financial performance of DFs whereas based on MBR the performance of DFs is stable. The performance of MNFs is better, stable and consistent both on the basis of ROA and MBR. A wide gap between the means and SDs of MCs for DFs (mean 20.34 and SD 2.09) and MNFs (mean 22.28 and SD 1.92) shows high volatility for the entire corporate sector. At an average 46.72 days are required to convert raw material into cash with an SD of 151.53 for DFs and 40.99 days are required with an SD of 153.07 for MNFs indicating high variability in WCM efficiencies among firms. Means of WC policy variables ranges from 0.21 to 1.29 whereas SD s vary between 0.87 and 1.17 for DFs. WC policy variables for MNFs range from 0.36 to 1.85 with SDs between 0.49 and 1.17. This indicates stability and reliability among firms in terms of WC policies adopted.

Table 4-7: Location-Wise Descriptive Statistics

Variable	Firms' location	Profit measure	Mean	SE	Median	SD	Skew	Min	Max
Firms' performance	DFs	ROA	6.49	0.47	3.98	15.79	3.16	-53.87	204.87
		MBR	1.12	0.07	0.71	2.44	3.98	-21.16	33.88
	MNFs	ROA	15.40	0.67	13.49	13.57	0.56	-21.45	62.47
		MBR	3.1	0.24	1.72	4.91	4.02	-1.81	39.42
CR	DFs	ROA	1.29	0.04	1.00	1.17	3.44	0.00	12.13
		MBR	1.29	0.04	1.00	1.17	3.44	0.00	12.13
	MNFs	ROA	1.85	0.06	1.51	1.17	1.96	0.02	9.11
		MBR	1.85	0.06	1.51	1.17	1.96	0.02	9.11
ATR	DFs	ROA	0.80	0.03	0.51	0.98	3.94	-1.22	12.13
		MBR	0.80	0.03	0.51	0.98	3.94	-1.22	12.13
	MNFs	ROA	1.16	0.06	0.95	1.05	2.94	-0.54	9.11
		MBR	1.16	0.05	0.95	1.04	2.94	-0.53	9.11
CAR	DFs	ROA	0.21	0.03	0.03	0.87	11.56	0.00	17.50
		MBR	0.21	0.03	0.03	0.87	11.56	0.00	17.50
	MNFs	ROA	0.36	0.02	0.16	0.49	2.54	0.00	3.02

		MBR	0.36	0.02	0.16	0.49	2.55	0.00	3.02
MC	DFs	ROA	20.34	0.06	20.20	2.09	0.42	14.77	28.87
		MBR	20.34	0.06	20.20	2.09	0.42	14.77	28.87
	MNFs	ROA	22.28	0.09	22.67	1.92	-0.47	16.74	26.60
		MBR	22.28	0.09	22.67	1.92	-0.47	16.74	26.56
DDM	DFs	ROA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MBR	00	0.00	0.00	0.00	0.00	0.00	0.00
	MNFs	ROA	1.00	0.00	1.00	0	-	1	1
		MBR	1.00	0.00	1.00	0.00	--	1.00	1.00
CCC	DFs	ROA	46.72	4.53	53.99	151.53	-1.66	-931.00	895.36
		MBR	46.72	4.53	53.99	151.53	-1.66	-931.00	895.36
	MNFs	ROA	40.99	7.60	51.60	153.07	-1.59	-968.33	941.60
		MBR	40.99	7.56	51.67	153.07	-1.59	-968.33	941.60
CGI	DFs	ROA	2.34	0.01	2.33	0.44	2.26	1.50	7.67
		MBR	2.34	0.01	2.33	0.44	2.26	1.50	7.67
	MNFs	ROA	2.29	0.02	2.17	0.46	0.53	1.50	3.67
		MBR	2.29	0.02	2.17	0.46	0.53	1.50	3.67
SG	DFs	ROA	0.20	0.02	0.15	0.63	6.67	-1.00	9.35
		MBR	0.20	0.02	0.14	0.63	6.64	-1.00	9.35
	MNFs	ROA	0.24	0.05	0.14	0.97	8.84	-0.98	11.66
		MBR	0.24	0.05	0.14	0.97	8.84	-0.98	11.66

Table 4-8 shows size-wise descriptive statistics. Keeping ROA as bench mark, Pakistani corporate sector shows weak and volatile financial performance for small and medium firms whereas better and stable performance for large firms. However, based on MBR, the performance of medium and large firms is stable whereas that of small firms unstable. A wider gap between means and SDs of MCs based on both ROA and MBR for all sizes of firms shows high volatility for the entire corporate sector. At an average, 21.35 days are required to convert raw material into cash with an SD of 191.54 by small firms, 50.75 days are required with an SD of 146.56 by medium firms and 31.65 days are required with an SD of 106.91 by large firms indicating high variability in WCM efficiencies among firms. Means of WC policy variables (CR, ATR, and CAR) ranges from 0.16 to 1.13 whereas SDs vary between 0.88 and 1.00 for small firms, from 0.25 to 1.48 with SDs between 0.87 and 1.28 for medium firms and from 0.33 to 1.70 with SDs between 0.47 and 1.19 for large firms. This indicates stability and reliability among firms across the Pakistani corporate sector in terms of WC policies adopted. Mean CGI of 2.27 both for small and medium firms and 2.44 for large firms being above SA (2.22) indicates size-wise better CG. Size-wise descriptive statistics more or less confirm the results of location-wise descriptive statistics.

Table 4-8: Size-Wise Descriptive Statistics

Variable	Firms' size	Profit measure	Mean	SE	Median	SD	Skew	Min	Max
Firms' performance	Small	ROA	2.76	0.76	1.43	16.39	5.09	-53.87	204.87
		MBR	0.50	0.12	0.33	2.50	0.46	-21.16	21.99
	Medium	ROA	7.43	0.50	6.17	12.39	0.75	-39.29	76.37
		MBR	1.31	0.07	0.92	1.64	6.74	-3.08	25.77
	Large	ROA	16.91	0.73	13.82	15.70	1.54	-21.45	134.73
		MBR	3.26	0.23	1.89	4.97	4.04	-4.18	39.42
CR	Small	ROA	1.13	0.05	0.95	1.00	4.54	0.00	12.13
		MBR	1.13	0.05	0.95	1.00	4.54	0.00	12.13
	Medium	ROA	1.48	0.05	1.08	1.28	2.57	0.00	8.45
		MBR	1.48	0.05	1.08	1.28	2.57	0.00	8.45
	Large	ROA	1.70	0.06	1.31	1.19	2.48	0.00	9.11
		MBR	1.70	0.06	1.31	1.19	2.48	0.00	9.11
ATR	Small	ROA	0.61	0.04	0.41	0.88	6.63	-1.22	12.13
		MBR	0.61	0.04	0.41	0.88	6.63	-1.22	12.13
	Medium	ROA	0.86	0.04	0.54	0.95	2.72	-0.72	5.99
		MBR	0.86	0.04	0.54	0.95	2.72	-0.72	5.99
	Large	ROA	1.22	0.05	0.96	1.10	2.98	-0.53	9.11
		MBR	1.22	0.05	0.96	1.10	2.98	-0.53	9.11
CAR	Small	ROA	0.16	0.04	0.02	0.92	15.61	0.00	17.50
		MBR	0.16	0.04	0.02	0.92	15.61	0.00	17.50
	Medium	ROA	0.25	0.04	0.04	0.87	7.65	0.00	11.06
		MBR	0.25	0.04	0.04	0.87	7.65	0.00	11.06
	Large	ROA	0.33	0.02	0.14	0.47	2.57	0.00	3.02
		MBR	0.33	0.02	0.14	0.47	2.57	0.00	3.02
MC	Small	ROA	18.51	0.05	18.65	1.18	-0.61	14.77	21.17
		MBR	18.51	0.05	18.65	1.18	-0.16	14.77	21.17
	Medium	ROA	20.68	0.04	20.68	0.90	-0.03	18.16	22.89
		MBR	20.68	0.04	20.68	0.90	-0.03	18.16	22.89
	Large	ROA	23.47	0.06	23.46	1.25	0.46	19.42	28.87
		MBR	23.47	0.06	23.46	1.25	0.46	19.42	28.87
DDM	Small	ROA	0.09	0.01	0.00	0.28	2.94	0.00	1.00
		MBR	0.09	0.01	0.00	0.28	2.94	0.00	1.00
	Medium	ROA	0.20	0.02	0.00	0.40	1.53	0.00	1.00
		MBR	0.20	0.02	0.00	0.40	1.53	0.00	1.00
	Large	ROA	0.54	0.02	1.00	0.50	-0.18	0.00	1.00
		MBR	0.54	0.02	1.00	0.50	-0.18	0.00	1.00
CCC	Small	ROA	21.35	8.93	64.91	191.54	-1.55	-968.33	853.12
		MBR	21.35	8.93	64.91	191.54	-1.55	-968.33	853.12
	Medium	ROA	50.75	5.93	65.97	146.56	-2.43	-931	895.36
		MBR	50.75	5.93	65.97	146.56	-2.43	-931.00	895.36
	Large	ROA	31.65	4.98	17.65	106.91	0.90	-631.22	941.60
		MBR	31.65	4.98	17.65	106.91	0.90	-631.22	941.60
CGI	Small	ROA	2.27	0.02	2.17	0.39	1.15	1.50	3.67
		MBR	2.27	0.02	2.17	0.39	1.15	1.50	3.67
	Medium	ROA	2.27	0.02	2.17	0.46	3.12	1.50	7.67

		MBR	2.27	0.02	2.17	0.46	3.12	1.50	7.67
	Large	ROA	2.44	0.02	2.33	0.47	0.42	1.50	3.67
		MBR	2.44	0.02	2.33	0.47	0.42	1.50	3.67
SG	Small	ROA	0.24	0.04	0.13	0.85	6.10	-0.99	9.35
		MBR	0.24	0.04	0.12	0.86	6.03	-0.99	9.35
	Medium	ROA	0.20	0.03	0.14	0.77	10.65	-0.99	11.66
		MBR	0.20	0.03	0.14	0.77	10.65	-0.99	11.66
	Large	ROA	0.20	0.03	0.16	0.54	6.66	-1.00	6.29
		MBR	0.20	0.03	0.16	0.54	6.66	-1.00	6.29

Summing up the results on descriptive statistics, we observed instability on the basis of ROA and steadiness based on MBR, a sizeable and constant stake of foreign investors, high inconsistency in WCM efficiencies, steady and consistent WC policies, better but volatile CG and satisfactory growth in overall Pakistani corporate sector. Besides a volatile financial performance based on ROA and stable performance based on MBR is observed for DFs whereas the performance of MNFs is better, stable and consistent both on the basis of ROA and MBR. Size-wise descriptive statistics based on ROA shows feeble and unstable financial performance for small and medium firms whereas better and stable performance for large firms. However, based on MBR, the performance of medium and large firms is stable whereas that of small firms unstable. Mean CGIs being above SA indicates size-wise better CG. Location-wise and size-wise descriptive statistics depicts almost the same state of Pakistani corporate sector.

4.3 Correlations Analysis

Table 4-9 reports pair-wise Pearson correlations among dependent, independent and control variables analyzing the data as a whole. Based on ROA, all the independent variables are positively correlated with firms' performance significant at 1% except MC and CGI which though are positively correlated however insignificant. On the basis of MBR, CAR is negatively and insignificantly correlated with firms' performance. The rest of the independent variables are positively correlated. DDM and CGI are significant at 1%. The highest magnitude of the correlation is with DDM (both with ROA and MBR where it is 25.1% and 25.8% respectively), CR and ATR (with ROA only) where it is 35% and 32.1% respectively. The low magnitudes of coefficients are due to high dispersion in the data set.

Table 4-9: Correlation among all Variables 'All Firms'

	ROA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
ROA	1									
MBR	.193[**]	1								
CR	.350[**]	.005	1							
ATR	.320[**]	.021	.911[**]	1						
CAR	.153[**]	-.003	.363[**]	.349[**]	1					
MC	.177[**]	.257[**]	.121[**]	.174[**]	.008	1				
DDM	.251[**]	.258[**]	.209[**]	.156[**]	.084[**]	.017	1			
CCC	.069[**]	.007	.191[**]	.066[**]	.009	.027	-.017	1		
CGI	.010	.108[**]	.026	.048	-.024	.017	-.049	-.024	1	
SG	.049	-.015	-.033	-.027	-.013	.003	.022	-.038	-.014	1

**. Correlation is significant at the 0.01 level

Location-wise correlations among variables are presented in appendix VIII. All the independent variables are positively correlated with firms' performance in DFs except CAR which has a weak negative correlation with it (only on the basis of MBR). Using ROA as performance proxy, all WC policy variables are significant at 1% having the highest magnitudes (CR 34.9% and ATR 33.2%). Besides CCC is significant, however positively correlated with firms' performance (which should have been theoretically and practically negatively correlated). On the basis of MBR, ATR is significant at 1% and CGI at 5%. In case of MNFs too, all the WC policy variables are positively correlated significant at 1%. On the basis of MBR, MC and CGI are positively correlated, significant at 1%. On the basis of ROA, CAR has the highest coefficient where it is 34.1% however, using MBR as performance measure, MC has the highest magnitude where it is 23.7%.

Appendix IX presents size-wise correlations. Based on ROA, all the independent variables are positively correlated with firms' performance in case of small firms except CGI which is negatively correlated. CR is the only significant independent variable at 1% confidence level having the highest coefficient of 14.4%. The negative relationship of CGI is due to different attitude of investors towards smaller firms. Investors in Pakistani stock market are not very keen in smaller firms. In case of medium firms there is a positive correlation of all independent

variables with firms' performance based on ROA. Out of these, all WC policy variables (CR, ATR, CAR), CCC and CGI are significant at 1% with CR having the highest coefficient of 47.5%. However the correlation of CCC is positive. Using MBR as proxy of firms' performance, all independent variables are positively correlated with firms' performance except CCC having negative correlation (which is according to theory, practice and the findings of available literature) and CAR which also has a negative correlation. On the basis of MBR as financial performance proxy, the only significant independent variable at 1% confidence level is MC having the highest coefficient of 12.3%. Using ROA as financial performance measure, in case of large firms, all the independent variables are positively correlated with firms' performance except CGI which is negatively correlated the reason being weaker CG practices of these firms than small and medium firms (4.1.4). On the basis of ROA, all WC policy variables (CR, ATR, and CAR), DDM and CGI are significant at 1%. CR has the highest magnitude of 30.3%. Using MBR as performance measure, MC and DDM are significantly correlated at 1% confidence level. Based on MBR, MC has the highest magnitude of 24.3%.

4.4 Multivariate Analysis

In this section, segment-wise regression results are reported. Analysis is based on empirical results obtained after employing various diagnostic tests such as multicollinearity, heteroscedasticity, model stability and model specification.

4.4.1 Diagnostics

Diagnostic tests used in the study along with their results are detailed below:

4.4.1.1 Multicollinearity

Variance Inflation Factor (VIF) and tolerance values are used to determine whether multicollinearity problem exists or not. Results about test for detecting multicollinearity problem are reported in table 4-10. As a rule of thumb, VIF value greater than 10 indicates existence of mullticollenearity problem (O'Brien 2007). VIF values for all variables under all segments of data are well below 10 indicating non existence of multicollenearity problem in the pooled OLS dataset for Pakistan.

Table 4-10: Multicollinearity Results (On the basis of both ROA and MBR)

Segment	Test	WC policy variable	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
Small firms	VIF	CR	1.188	--	--	1.078	1.109	1.112	1.023	1.017
		ATR	--	1.075	--	1.055	1.066	1.062	1.021	1.018
		CAR	--	--	1.001	1.031	1.023	1.058	1.013	1.017
	Tolerance	CR	0.842	--	--	.927	0.902	0.900	0.978	0.983
		ATR	--	0.931	--	0.948	0.938	0.941	0.980	0.983
		CAR	--	--	0.999	0.970	0.978	0.945	0.987	0.983
Medium firms	VIF	CR	1.065	--	--	1.022	1.026	1.057	1.004	1.013
		ATR	--	1.027	--	1.019	1.025	1.026	1.003	1.013
		CAR	--	--	1.007	1.009	1.025	1.018	1.004	1.012
	Tolerance	CR	0.939	--	--	0.979	0.975	0.946	0.996	0.987
		ATR	--	0.973	--	0.981	0.976	0.974	0.997	0.987
		CAR	--	--	0.993	0.991	0.975	0.982	0.996	0.989
Large firms	VIF	CR	1.163	--	--	1.061	1.153	1.064	1.073	1.009
		ATR	--	1.076	--	1.080	1.094	1.019	1.073	1.009
		CAR	--	--	1.107	1.024	1.188	1.013	1.073	1.008
	Tolerance	CR	0.860	--	--	0.942	0.867	0.939	0.932	0.992
		ATR	--	0.929	--	0.926	0.914	0.981	0.932	0.991
		CAR	--	--	0.903	0.977	0.842	0.987	0.932	0.992
DFs	VIF	CR	1.064	--	--	1.024	--	1.048	1.003	1.006
		ATR	--	1.055	--	1.047	--	1.015	1.005	1.006
		CAR	--	--	1.002	1.002	--	1.009	1.004	1.006
	Tolerance	CR	0.940	--	--	0.976	--	0.954	0.997	0.994
		ATR	--	0.948	--	0.955	--	0.986	0.995	0.994
		CAR	--	--	0.998	0.998	--	0.991	0.996	0.994
MNFs	VIF	CR	1.072	--	--	1.033	--	1.052	1.021	1.016
		ATR	--	1.015	--	1.024	--	1.012	1.018	1.012
		CAR	--	--	1.010	1.023	--	1.010	1.021	1.006
	Tolerance	CR	0.932	--	--	0.968	--	0.950	0.979	0.985
		ATR	--	0.985	--	0.977	--	0.988	0.982	0.988
		CAR	--	--	0.990	0.977	--	0.990	0.979	0.994
All firms	VIF	CR	1.107	--	--	1.015	1.053	1.044	1.005	1.003
		ATR	--	1.065	--	1.031	1.029	1.008	1.007	1.003
		CAR	--	--	1.008	1.001	1.010	1.003	1.004	1.002

Tolerance	CR	0.904	--	--	0.985	0.950	0.958	0.995	0.997
	ATR	--	0.939	--	0.969	0.972	0.992	0.993	0.997
	CAR	--	--	0.992	0.999	0.990	0.997	0.996	0.998

4.4.1.2 Heteroscedasticity

In order to detect whether heteroscedasticity exists or not, the study uses Breusch Pagan Godfrey (Breusch and Pagan, 1979) and Park tests (Park, 1966). There is no hetroscedasticity if p value against observed R square under Breusch Pagan Godfrey test is more than 0.05 (p > .05). Under Park test, t value less than 2 and p value more than .05 indicates non existence of hetroscedasticity. The results for all segments are given in table 4-11 below:

Table 4-11: Hetroscedasticity Results

Segment	Profit Proxy	Test	p-value	t- value	Result
Small firms	ROA	Breusch Pagan Godfrey	0.2540	--	No hetroscedasticity
	MBR	Breusch Pagan Godfrey	0.059	**--**	No hetroscedasticity
Medium firms	ROA	Park	0.3181	0.9992	No hetroscedasticity
	MBR	Breusch Pagan Godfrey	0.452	--	No hetroscedasticity
Large firms	ROA	Breusch Pagan Godfrey	0.1000	--	No hetroscedasticity
	MBR	Park	0.159	-1.4118	No hetroscedasticity
DFs	ROA	Park	0.1451	-1.4581	No hetroscedasticity
	MBR	Breusch Pagan Godfrey	0.502	--	No hetroscedasticity
MNFs	ROA	Park	0.8386	-0.2038	No hetroscedasticity
	MBR	Park	0.0667	-1.8388	No hetroscedasticity
All firms	ROA	Breusch Pagan Godfrey	0.0646	--	No hetroscedasticity
	MBR	Park	0.2873	-1.0644	No hetroscedasticity

4.4.1.3 Model Specification test

The study uses Wald test (Wald 1943) to choice between OLS and fixed effect (FE) models, and Hausman specification test (Hausman 1978) to opt between FE and random effect (RE) models. The results about model selection are given in table 4-12.

Table 4-12: Results of Model Specification Test --All Segments

Segment	Test	Profit Proxy	P value	Appropriate Model
Small firms	Wald	ROA	0.603	OLS
		MBR	0.217	OLS
	Hausman	ROA	0.960	RE
		MBR	0.00	FE
Medium firms	Wald	ROA	0.385	OLS
		MBR	0.21	OLS
	Hausman	ROA	0.531	RE
		MBR	0.046	FE
Large firms	Wald	ROA	0.00	FE
		MBR	0.00	FE
	Hausman	ROA	0.00	FE
		MBR	0.104	RE
DFs	Wald	ROA	0.00	FE
		MBR	0.00	FE
	Hausman	ROA	0.00	FE
		MBR	0.264	RE
MNFs	Wald	ROA	0.00	FE
		MBR	0.00	FE
	Hausman	ROA	0.00	FE
		MBR	0.123	RE
All Firms	Wald	ROA	0.00	FE
		MBR	0.00	FE
	Hausman	ROA	0.00	FE
		MBR	0.523	RE

As reported in table 4-12, the study employed FE model to analyze large firms, DFs, MNFs and overall data whereas RE model is used to analyze small and medium firms on the basis of ROA. On the basis of MBR, FE model is used to analyze small and medium firms whereas RE model is used to analyze large firms, DFs, MNFs and overall data.

4.4.1.4 Model Stability Test

CUSUM (Cumulative Sum) residuals test (Page, 1954) is used to check the stability of model. The results are summarized in table 4-13.

Table 4-13: Summary of Segment-wise Model Stability Results

Segment	Profit Proxy	Comments	Result
Small firms	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable
Medium firms	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable
Large firms	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable
DFs	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable
MNFs	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable
All Firms	ROA	CUSUM residual line is within the critical region	Model is stable
	MBR	CUSUM residual line is within the critical region	Model is stable

4.4.2 Regression Results

The regression results are classified as size-wise, location-wise and 'all firms'. The detailed discussion on these results is as under:

4.4.2.1 Size-Wise Analysis

Table 4-14 presents the impact of all independent variables on the dependent variable and changes in profitability due to firms' size using ROA as firms' performance.

Table 4-14: Size-Wise Regression results (ROA)

Variable	Size	WC policy variable	Coefficient	SE	t-Statistic	Probability
	Small	CR	3.45	4.64	0.74	0.46
		ATR	3.96	4.65	0.85	0.39
		CAR	3.57	4.66	0.77	0.44
	Medium	CR	-5.28	2.28	-2.57	0.01
C		ATR	-4.70	2.31	-2.05	0.04

		CAR	-2.24	2.50	-0..89	0.36
	Large	CR	19.63	4.03	4.87	0.00
		ATR	20.46	4.02	5.09	0.00
		CAR	22.32	3.95	5.65	0.00
	Small	CR	1.83	0.82	2.23	0.03
		ATR	1.00	0.89	1.13	0.26
		CAR	1.07	0.83	1.29	0.19
	Medium	CR	4.28	0.35	12.27	0.00
		ATR	5.17	0.47	10.99	0.00
		CAR	1.92	0.55	3.47	0.00
WC policy variable	Large	CR	2.90	0.60	4.81	0.00
		ATR	2.88	0.63	4.59	0.00
		CAR	7.60	1.50	5.01	0.00
	Small	CR	8.05	4.11	1.96	0.05
		ATR	9.24	4.08	2.26	0.02
		CAR	9.96	4.04	2.47	0.14
	Medium	CR	1.05	0.311	3.36	0.00
		ATR	1.11	0.32	3.53	0.00
		CAR	1.46	0.34	4.25	0.00
	Large	CR	0.02	0.00	4.22	0.00
		ATR	0.01	0.01	4.03	0.00
MC		CAR	0.02	0.00	5.16	0.00
	Small	CR	2.28	2.82	0.81	0.42
		ATR	3.40	2.78	1.23	0.22
		CAR	4.06	2.72	1.49	0.14
	Medium	CR	-1.20	1.11	-1.09	0.27
		ATR	-0.31	1.13	-0.27	0.78
		CAR	-0.49	1.22	-0.39	0.69
	Large	CR	5.99	1.43	4.17	0.00
		ATR	7.00	1.40	5.00	0.00
DDM		CAR	5.50	1.45	3.79	0.00
	Small	CR	0.00	0.00	0.66	0.51
		ATR	0.01	0.01	1.10	0.27
		CAR	0.01	0.01	1.18	0.24
	Medium	CR	0.01	0.00	2.19	0.03
		ATR	0.01	0.00	3.48	0.00
		CAR	0.01	0.00	4.08	0.00
	Large	CR	-0.01	0.01	-0.39	0.69
		ATR	0.01	0.01	0.34	0.74
CCC		CAR	0.01	0.01	0.72	0.47

	Small	CR	-2.18	1.98	-1.10	0.27
		ATR	-1.95	1.98	-0.98	0.33
		CAR	-1.67	1.98	-0.85	0.39
	Medium	CR	2.24	0.94	2.38	0.02
		ATR	2.36	0.96	2.46	0.01
		CAR	2.78	1.04	2.67	0.00
	Large	CR	-4.79	1.47	-3.26	0.01
		ATR	-4.83	1.47	-3.27	0.00
CGI		CAR	-4.94	1.47	-3.36	0.00
	Small	CR	1.55	0.90	1.73	0.08
		ATR	1.54	0.90	1.71	0.08
		CAR	1.57	0.89	1.74	0.08
	Medium	CR	1.48	0.57	2.60	0.01
		ATR	1.47	0.58	2.53	0.01
		CAR	1.24	0.63	1.97	0.04
	Large	CR	0.95	1.23	0.78	0.44
		ATR	0.96	1.23	0.78	0.44
SG		CAR	0.89	1.23	0.72	0.47

Using ROA as profit measure, empirical results (table 4-14) show that all the WC policy variables (CR,ATR, CAR) are significant at 1% in medium and large firms having a strong positive relationship with firms' performance. Firms size (MC) used as a control variable has a positive relationship with their financial performance significant at 1% in medium and large firms based on all the WC policy proxies. However in small firms, it is significant at 5% on the basis of CR and ATR only. DDM has been used as a proxy of firms' location and control variable is significant at 1% confidence level on the basis of all WC policy variables because most of the large firms are MNFs. CGI is another control variable has a positive and significant relationship with firms' performance in medium firms however inverse relationship in large firms the reason may be the dominance of the strong negative impact of their larger board size on profitability (Guest 2009).

Table 4-15 presents the impact of all independent variables on the dependent variable and changes in profitability due to firms' size using MBR as a measure of firms' performance.

Table 4-15: Size-Wise Regression results (MBR)

Variable	Size	WC policy variable	Coefficient	SE	t-Statistic	Probability
	Small	CR	-1.778	0.70	-2.52	0.01
		ATR	-1.82	0.70	-2.58	0.01
		CAR	-1.82	0.71	-2.59	0.01
	Medium	CR	0.28	0.34	0.84	0.39
		ATR	0.26	0.34	0.76	0.44
		CAR	0.28	0.33	0.84	0.40
	Large	CR	0.01	1.26	0.01	0.99
		ATR	0.01	1.26	0.01	0.99
C		CAR	-1.19	1.26	-0.94	0.35
	Small	CR	-0.15	0.12	-1.18	0.23
		ATR	-0.02	0.13	-0.18	0.85
		CAR	0.02	0.13	0.17	0.86
	Medium	CR	-0.03	0.05	-0.59	0.55
		ATR	-0.00	0.07	-0.07	0.94
		CAR	-0.07	0.07	-1.01	0.31
WC policy variable	Large	CR	-1.14	0.19	-6.04	0.00
		ATR	-1.14	0.19	-6.04	0.00
		CAR	-1.97	0.48	-4.14	0.00
	Small	CR	2.41	0.62	3.86	0.00
		ATR	2.27	0.62	3.67	0.00
		CAR	2.25	0.61	3.68	0.00
	Medium	CR	0.28	0.05	5.96	0.00
		ATR	0.27	0.05	5.90	0.00
		CAR	0.27	0.04	5.99	0.00
	Large	CR	0.01	0.00	7.64	0.00
		ATR	0.01	0.00	7.64	0.00
MC		CAR	0.01	0.00	6.55	0.00
	Small	CR	0.38	0.43	0.88	0.38
		ATR	0.25	0.42	0.60	0.55
		CAR	0.24	0.411	0.58	0.57
	Medium	CR	0.17	0.16	1.03	0.30
		ATR	0.16	0.16	1.00	0.31
		CAR	0.16	0.16	0.97	0.33
	Large	CR	3.50	0.45	7.83	0.00
		ATR	3.51	0.45	7.82	0.00
DDM		CAR	3.40	0.46	7.33	0.00
	Small	CR	0.00	0.00	1.01	0.31
CCC		ATR	0.00	0.00	0.79	0.43

		CAR	0.00	0.00	0.78	0.44
	Medium	CR	-0.01	0.00	-1.09	0.27
		ATR	-0.00	0.00	-1.22	0.22
		CAR	-0.01	0.01	-1.19	0.23
	Large	CR	0.00	0.00	1.91	0.05
		ATR	0.01	0.00	1.91	0.05
		CAR	0.00	0.00	0.56	0.57
	Small	CR	0.85	0.30	2.83	0.01
		ATR	0.82	0.30	2.73	0.01
		CAR	0.82	0.29	2.73	0.01
	Medium	CR	0.29	0.14	2.08	0.04
		ATR	0.29	0.14	2.06	0.04
		CAR	0.29	0.14	2.02	0.04
	Large	CR	1.16	0.46	2.54	0.01
		ATR	1.16	0.46	2.53	0.01
CGI		CAR	1.21	0.47	2.58	0.10
	Small	CR	0.02	0.14	0.18	0.85
		ATR	0.02	0.14	0.18	0.85
		CAR	0.02	0.14	0.18	0.86
	Medium	CR	0.08	0.08	0.93	0.35
		ATR	0.08	0.08	0.94	0.34
		CAR	0.08	0.08	0.94	0.35
	Large	CR	-0.40	0.38	-1.04	0.29
		ATR	-0.40	0.38	-1.04	0.29
SG		CAR	-0.35	0.39	-0.89	0.37

Using MBR as profit measure, as against results on the basis of ROA, all WC policy variables are significant only in large firms at 1% confidence level however negatively associated suggesting that these firms must keep investment at minimum in liquid assets. Firms' size has a positive relationship with financial performance significant at 1% in all sizes of firms based on all the WC policy proxies. However in small firms, this relationship is stronger than medium and large firms. On the basis of MBR too, DDM (location) has a strong positive relationship with firms' performance significant at 1% confidence level because most of the large firms are MNFs. CGI has a positive and significant relationship with firms' performance in all firms suggesting that CG practices significantly impact firms' performance.

4.4.2.2 Location-Wise Analysis

Based on ROA, regression results showing the impact of explanatory variables used in the study on profitability and variation in firms' performances because of their location are reported in table 4-16.

Table 4-16: Location-Wise Regression results (ROA)

Variable	Location	WC policy variable	Coefficient	SE	t-Statistic	Probability
C	DFs	CR	-1.85	2.38	-0.78	0.43
		ATR	0.30	2.38	0.13	0.90
		CAR	1.89	2.4	0.77	0.44
	MNFs	CR	11.34	3.24	3.49	0.00
		ATR	13.18	3.22	4.09	0.00
		CAR	13.80	3.04	4.54	0.00
WC policy variable	DFs	CR	4.37	0.38	11.38	0.00
		ATR	4.86	0.46	10.53	0.00
		CAR	1.85	0.53	3.52	0.00
	MNFs	CR	2.79	0.55	5.11	0.00
		ATR	2.48	0.61	4.14	0.00
		CAR	9.38	1.22	7.69	0.00
MC	DFs	CR	0.02	0.00	4.47	0.00
		ATR	0.014	0.01	3.85	0.00
		CAR	0.02	0.01	5.88	0.00
	MNFs	CR	0.16	0.02	7.71	0.00
		ATR	0.15	0.02	7.23	0.00
		CAR	0.15	0.02	7.47	0.00
DDM	DFs	CR	0	0	65535	--
		ATR	0	0	65535	--
		CAR	0	0	65535	--
	MNFs	CR	0	0	65535	--
		ATR	0	0	65535	--
		CAR	0	0	65535	--
CCC	DFs	CR	0.00	0.00	1.12	0.26
		ATR	0.01	0.01	2.57	0.01
		CAR	0.01	0.01	3.18	0.01
	MNFs	CR	0.00	0.01	0.19	0.85
		ATR	0.01	0.01	1.03	0.30
		CAR	0.01	0.01	1.16	0.24
CGI		CR	0.79	0.98	0.81	0.42
		ATR	0.54	0.99	0.55	0.58

Variable	Location	WC policy variable	Coefficient	SE	t-Statistic	Probability
	DFs	CAR	1.27	1.03	1.23	0.22
		CR	-1.65	1.36	-1.21	0.23
		ATR	-1.43	1.37	-1.04	0.29
	MNFs	CAR	-1.90	1.31	-1.45	0.14
		CR	2.47	0.70	3.56	0.00
		ATR	2.47	0.70	3.53	0.00
	DFs	CAR	2.53	0.73	3.46	0.00
		CR	-0.20	0.64	-0.32	0,75
		ATR	-0.31	0.65	-0.48	0.63
SG	MNFs	CAR	-0.34	0.62	-0.55	0.58

Using ROA as profit measure, empirical results (table 4-16) show that all the WC policy variables are significant at 1% in both the segments of sample based on location (both DFs and MNFs) having a strong positive relationship with firms' performance. Size-wise and location-wise regression results support our hypothesis 5 that "*The influence and nature of WC policy varies with firms' size and location*". Firms' size has a weak positive relationship with their financial performance significant at 1% in all firms using all the WC policy proxies as independent variables separately.

Based on MBR, location-wise regression results are reported in table 4-17.

Table 4-17: Location-Wise Regression results (MBR)

Variable	Location	WC policy variable	Coefficient	SE	t-Statistic	Probability
	DFs	CR	0.08	0.38	0.22	0.82
		ATR	0.06	0.37	0.17	0.87
		CAR	0.10	0.37	0.25	0.79
	MNFs	CR	-0.91	0.99	-0.92	0.36
		ATR	-1.28	0.97	-1.31	0.18
C		CAR	-1.78	0.97	-1.82	0.06
	DFs	CR	0.01	0.06	0.17	0.86
		ATR	0.07	0.07	0.93	0.35
		CAR	0.00	0.08	0.01	0.99
WC policy variable	MNFs	CR	-0.75	0.17	-4.55	0.00
		ATR	-0.84	0.18	-4.61	0.00
		CAR	-1.26	0.39	-3.22	0.00
	DFs	CR	0.01	0.00	10.52	0.00
		ATR	0.01	0.00	10.24	0.00
		CAR	0.01	0.00	10.66	0.00
MC		CR	0.09	0.01	14.55	0.00

	MNFs	ATR	0.10	0.01	15.00	0.00
		CAR	0.10	0.01	14.91	0.00
DDM	DFs	CR	0	0	65535	--
		ATR	0	0	65535	--
		CAR	0	0	65535	--
	MNFs	CR	0	0	65535	--
		ATR	0	0	65535	--
		CAR	0	0	65535	--
CCC	DFs	CR	0.00	0.00	0.24	0.81
		ATR	0.00	0.00	0.21	0.83
		CAR	0.00	0.00	0.28	0.78
	MNFs	CR	0.01	0.01	2.36	0.01
		ATR	0.01	0.00	1.69	0.09
		CAR	0.01	0.01	1.51	0.13
CGI	DFs	CR	0.40	0.15	2.57	0.10
		ATR	0.39	0.16	2.53	0.01
		CAR	0.40	0.16	2.58	0.01
	MNFs	CR	1.66	0.41	4.00	0.00
		ATR	1.62	0.41	3.93	0.00
		CAR	1.61	0.42	3.84	0.00
SG	DFs	CR	0.01	0.11	0.12	0.91
		ATR	0.01	0.11	0.11	0.91
		CAR	0.01	0.11	0.12	0.91
	MNFs	CR	-0.15	0.20	-0.77	0.44
		ATR	-0.14	0.19	-0.70	0.49
		CAR	-0.08	0.19	-0.43	0.66

Using MBR as profit measure, firms' size has a positive relationship with financial performance significant at 1% in all firms using all the WC policy proxies as independent variables separately. Both size-wise and location-wise regression results support our hypothesis 1 that "*Size of the firm is positively related with profitability*". CGI has a positive and significant relationship with firms' performance. Significant positive relationship between CGI and firms' performance using MBR as dependent variable shows that CG matters in determining firms' performance. This finding supports our hypothesis *7 that "the quality of CG has a positive relationship with firms' performance"*.

4.4.2.3 'All Firms' Analysis

Results regarding the impact of all independent variables used in the study on overall Pakistani corporate sector are reported in table 4-18.

Table 4-18: Descriptive Statistics 'All firms'

Variable	Profit measure	WC policy variable	Coefficient	SE	t-Statistic	Probability
C	ROA	CR	-.106	2.008	-.053	.958
		ATR	1.662	2.002	.830	.407
		CAR	3.081	2.070	1.489	.137
	MBR	CR	-.865	.453	-1.910	.056
		ATR	-.991	.450	-2.202	.028
		CAR	-1.006	.449	-2.241	.025
WC policy variable	ROA	CR	4.065	.322	12.610	.000
		ATR	4.468	.374	11.939	.000
		CAR	2.648	.488	5.426	.000
	MBR	CR	-.174	.073	-2.240	.017
		ATR	-.090	.084	-1.069	.285
		CAR	-.098	.106	-.924	.355
MC	ROA	CR	.001	.002	.833	.405
		ATR	.002	.002	1.137	.256
		CAR	.001	.002	.756	.450
	MBR	CR	.001	.000	1.801	.072
		ATR	.001	.000	1.778	.076
		CAR	.001	.000	1.808	.071
DDM	ROA	CR	6.620	.856	7.734	.000
		ATR	7.353	.850	8.647	.000
		CAR	8.584	.873	9.839	.000
	MBR	CR	2.137	.193	11.073	.000
		ATR	2.069	.191	10.826	.000
		CAR	2.050	.189	10.832	.000
CCC	ROA	CR	.002	.002	.635	.526
		ATR	.006	.002	2.343	.019
		CAR	.008	.003	3.025	.003
	MBR	CR	.001	.001	.995	.320
		ATR	.000	.001	.602	.547
		CAR	.000	.001	.537	.591
CGI	ROA	CR	.425	.825	.515	.607
		ATR	.291	.830	.351	.726
		CAR	.963	.858	1.122	.262
	MBR	CR	.935	.186	5.026	.000
		ATR	.927	.186	4.974	.000
		CAR	.912	.186	4.900	.000

SG	ROA	CR	1.195	.503	2.376	.018
		ATR	1.165	.505	2.304	.021
		CAR	1.039	.523	1.985	.047
	MBR	CR	-.096	.113	-.844	.399
		ATR	-.091	.114	-.797	.425
		CAR	-.089	.114	-.781	.435

As evident from the results presented in table 4-18, based on ROA and controlling the effects of firms' size, location, working capital management efficiency, corporate governance and sales growth, all the WC policy variables separately used have a strong positive relationship with firms' performance significant at 1% confidence level. Using MBR as profit measure, the results indicate that the only significant independent variable is CR however negatively related with firms' financial performance.

4.4.2.4 Summary of Results Based on ROA

Using ROA as profitability measure, size-wise regression results show that all the WC policy variables (CR,ATR, CAR) are significant at 1% in medium and large firms having a strong positive relationship with firms' performance whereas location-wise results indicate that all the WC policy variables are significant at 1% in both the segments of sample based on location (both DFs and MNFs) having a strong positive relationship with firms' performance. The same finding is confirmed while analyzing 'all firms' data. According to size-wise analysis, firms' size used as a control variable has a positive relationship with their financial performance significant at 1% in medium and large firms based on all the WC policy proxies. However in small firms, it is significant at 5% on the basis of CR and ATR only. Location-wise regression results indicate weak positive relationship between firms' size and financial performance significant at 1%. DDM has been used as a proxy of firms' location and control variable is significant at 1% confidence level on the basis of all WC policy variables because most of the large firms are MNFs. CGI is another control variable has a positive and significant relationship with firms' performance in medium firms however inverse relationship in large firms the reason may be the dominance of the strong negative impact of their larger board size on profitability.

4.4.2.5 Summary of Results Based on MBR

Location-wise empirical results show that all the WC policy variables are significant at 1% in both the segments of sample based on location having a strong positive relationship with firms' performance. Size-wise results show that firms' size has a positive relationship with financial performance significant at 1% in all sizes of firms based on all the WC policy proxies. However in small firms, this relationship is stronger than medium and large firms. According to location-wise results, firms' size has a weak positive relationship with their financial performance significant at 1% in both DFs and MNFs. DDM representing location has a strong positive relationship with firms' performance significant at 1% confidence level. CGI has a positive and significant relationship with firms' performance analyzing data as a whole suggesting that CG practices significantly impact firms' performance.

4.4.2.6 Combined Results Based on ROA and MBR

Clubbing the results both on the basis of ROA and MBR, WC policies with all its proxies significantly affect firms' performance with highest coefficients. Another finding is that using MBR as profit measure; ATR and CAR have negative and insignificant whereas CR has negative and significant relationship with profitability. However based on ROA, all the WC policy variables have positive and significant relationship with firms' performance. Firms' size used as control variable has positive and significant relationship with firms' performance. DDM—another control variable has a positive and significant relationship with firms' performance suggesting a prominent role of location in large firms because most of the large firms are MNFs. On the basis of ROA, CGI has a positive and significant relationship with firms' performance in medium firms however inverse relationship in large firms the reason may be the dominance of the strong negative impact of their larger board size on profitability. Using MBR as profit measure, CGI has a positive and significant relationship with firms' performance analyzing data as a whole suggesting that CG practices significantly impact firms' performance.

4.4.2.7 Model Results

A segment-wise summary of model results derived using pooled OLS models is given in table 4-19 below:

Table 4-19: Summary of Regression Model Results

Result \ Segment	Profit proxy	WC policy variable	All Firms	DFs	MNFs	Small Firms	Medium Firms	Large Firms
Sample Size	ROA	CR	153	112	41	46	61	46
		ATR	153	112	41	46	61	46
		CAR	153	112	41	46	61	46
	MBR	CR	153	112	41	46	61	46
		ATR	153	112	41	46	61	46
		CAR	153	112	41	46	61	46
No. of Observations	ROA	CR	1,530	1,120	410	460	610	460
		ATR	1,530	1,120	410	460	610	460
		CAR	1,530	1,120	410	460	610	460
	MBR	CR	1,530	1,120	410	460	610	460
		ATR	1,530	1,120	410	460	610	460
		CAR	1,530	1,120	410	460	610	460
F-Statistics	ROA	CR	54.70	38.86	16.07	3.13	35.51	17.03
		ATR	50.22	34.98	14.04	2.50	30.13	16.63
		CAR	33.68	14.22	23.54	2.56	10.52	17.55
	MBR	CR	45.50	24.30	55.53	4.03	7.07	19.54
		ATR	44.53	24.49	55.71	3.79	7.00	19.54
		CAR	42.95	24.29	52.22	3.79	7.19	15.77
Significance F	ROA	CR	0.00	0.00	0.00	0.010	0.00	0.00
		ATR	0.00	0.00	0.00	0.02	0.00	0.00
		CAR	0.00	0.00	0.00	0.01	0.00	0.00
	MBR	CR	0.00	0.00	0.00	0.00	0.00	0.00
		ATR	0.00	0.00	0.00	0.00	0.00	0.00
		CAR	0.00	0.00	0.00	0.00	0.00	0.00
R-Square	ROA	CR	0.18	0.15	0.17	0.04	0.26	0.18
		ATR	0.17	0.14	0.15	0.03	0.23	0.18
		CAR	0.12	0.06	0.23	0.03	0.09	0.19
	MBR	CR	0.15	0.10	0.41	0.05	0.06	0.21
		ATR	0.15	0.10	0.41	0.05	0.07	0.21
		CAR	0.15	0.10	0.39	0.05	0.07	0.17
Adjusted R-Square (%)	ROA	CR	0.17	0.14	0.15	0.03	0.25	0.17
		ATR	0.16	0.13	0.15	0.02	0.22	0.17
		CAR	0.11	0.05	0.22	0.02	0.09	0.18
	MBR	CR	0.15	0.09	0.40	0.04	0.05	0.20
		ATR	0.14	0.09	0.40	0.03	0.06	0.20
		CAR	0.14	0.10	0.38	0.04	0.05	0.16
SE	ROA	CR	14.29	14.61	12.47	16.16	10.72	14.27
		ATR	14.40	14.72	12.60	16.23	10.94	14.30
		CAR	14.81	15.35	12.01	16.22	11.86	14.23
	MBR	CR	3.14	2.32	3.80	2.45	1.59	4.45
		ATR	3.14	2.32	3.80	2.46	1.59	4.45

		CAR	3.15	2.32	3.85	2.45	1.59	4.55

F- Statistic and p value tells about the overall fitness of model. As can be seen in table 4-19, using ROA as profit measure, with the exception of small firms, F-Statistics is more than 4 and p value is 0.000 for all segments of data. Based on MBR as profit measure, rounding to nearest digit in case of small firms, F-Statistics is 4 or more and p value is 0.000 for all segments of data. This shows that the model used in the study is best fit to estimate the results. R-square shows that highest explanatory power of the independent and control variables included in the model based on MBR occur in MNFs where dependent variable is explained to the extent of 41% whereas based on ROA it is 26% in medium firms.

4.5   Logistic Regression Analysis

As reported in previous sections (4.4.2.7), WC policy through its proxies, CR, ATR and CAR is found to be the most significant and influential factor determining firms' performance using both ROA and MBR as profitability measures. This section identifies the factor or factors significantly affecting WC policy using multinomial logistic regression model. For determining the type of WC policy, long term investment (LTI) of each firm in the sample is compared with the long term financing (LTF) as presented in appendix VII using the following criteria:

1. If LTF is equal to LTI i.e. the difference is 0, it is considered as hedging WCP and is assigned a dummy number '0'.
2. If LTF is less than LTI i.e. the difference is negative, it is considered as aggressive WCP and is assigned a dummy number '1'.
3. If LTF is more than LTI i.e. the difference is positive, it is considered as conservative WCP and is assigned a dummy number '2'.

The following multinomial logistic regression model is employed.

$$WCP = \beta_0 + \beta_1 (DDM)\ \beta_2 (ROA) + \beta_3 (MBR) + \beta_4 (CR) + \beta_5 (MC) + \beta_6 (CCC) + \varepsilon \qquad (4\text{-}1)$$

Where WCP indicates working capital policy and is used as dependent variable. This variable is formed by incorporating all dummies including '0' for hedging, '1' for aggressive and '2' for

74

conservative WCP. Independent variables include DDM, ROA, MBR, CR, MC and CCC. Results are reported in table 4-20.

Table 4-20: Logistic Regression Results

Dummy	WCP[a]	Beta	SE	Wald	Df	Sig.	Exp (B)/Odd ratio
0	Intercept	-3.01	6.70	0.20	1	0.65	--
	ROA	.06	.06	1.25	1	0.26	1.07
	MBR	-.01	.25	.00	1	.98	.99
	CR	-.32	.64	.25	1	.62	.73
	MC	.04	.32	.02	1	.90	1.04
	CCC	-.01	.01	1.42	1	.23	.99
	[DDM=0]	.13	1.11	.01	1	.91	1.14
	[DDM=1]	0[b]	.	.	0	.	.
1	Intercept	7.97	2.87	7.70	1	.01	
	ROA	.06	.03	3.63	1	.05	1.06
	MBR	.11	.13	.75	1	.39	1.12
	CR	-.29	.24	1.40	1	.24	.75
	MC	-.35	.14	6.52	1	.01	.71
	CCC	.01	.01	.06	1	.81	1.01
	[DDM=0]	.43	.49	.78	1	.38	1.54
	[DDM=1]	0[b]	.	.	0	.	.

a. The reference category is: 2.
b. This parameter is set to zero because it is redundant.

Table 4-20 above estimates the coefficients (parameters) of the model. Results show that ROA and MC are the variables determining the WC policy of firms significant at 5% and 1% respectively (on the basis of dummy set '1'). ROA having positive coefficient (0.06) influences firms' to adopt conservative WC policy to which we have assigned dummy '2' whereas MC having negative coefficient (-0.35) influences firms' to adopt hedging WC policy to which we have assigned dummy '0'.

4.5.1 Fitness of the Model

The study uses overall percentage of correct predictions and Hosmer and Lemeshow (2000) test to check the fitness of the multinomial logistic regression model. Table 4-21 presents observed and predicted frequencies for all the variables included in the model. This table shows that 71.9% predictions are correct evidencing overall fitness of the model used for analysis.

Table 4-21: The Observed and Predicted Frequencies

Observed	Logit	Predicted			Percent Correct
		0	1	2	
0	WCP	0	5	0	0.0%
1	WCP	0	108	4	96.4%
2	WCP	0	34	2	5.6%
Overall % Correct	WCP	0.0%	96.1%	3.9%	71.9%

4.6 Summary

Using ROA as profit measure, corporate sector of Pakistan indicates volatility whereas based on MBR it shows stability. Means of WC policy variables (CR, ATR, and CAR) ranges from 0.25 to 1.44 whereas SDs varies between 0.27 and 1.20 indicating stability and reliability of WC policy. Mean CGI of 2.32 being above SA (2.22) indicates better CG however comparing with SD of 0.45 shows volatility among CG practices of firms. Location-wise descriptive statistics indicate that based on ROA, Pakistani corporate sector shows volatile financial performance of DFs whereas based on MBR the performance of DFs is stable. The performance of MNFs is better, stable and consistent both on the basis of ROA and MBR. Means of WC policy variables ranges from 0.21 to 1.29 whereas SD s varies between 0.87 and 1.17 for DFs. WC policy variables for MNFs range from 0.36 to 1.85 with SDs between 0.49 and 1.17. This indicates stability and reliability among firms in terms of WC policies adopted. Logistic regression results show that ROA and MC are the variables determining the WC policy of firms significant at 5% and 1% respectively.

5 SUMMARY AND CONCLUSION

Review of literature indicates availability of thin scientific research to investigate location-wise and size-wise impact of WCM policies, WCME and CG practices on firms' performance. Furthermore, the previous research addresses more or less country specific issues. This study investigated corporate sector of Pakistan in somewhat different way by comparing firms' performance on the basis of size and location using a sample consists of 153 PSE listed firms covering a period of ten years (2004-2013) for ten economic groups. Location-wise breakup indicates 73.20 % DFs and 26.80% MNFs whereas size-wise breakup shows 30% small, 40% medium and 30% large firms. This study used a multi-theoretical and multidimensional approach in analyzing the data according to location and size as well as determining financial performance on the basis of ROA (a book value based performance measure) and MBR (a market value based performance measure) to examine the posed research questions.

Theoretical link has been obtained from operating cycle, financing, investment, liquidity, pecking order and agency theories. Analysis is carried out in three dimensions namely location-wise (DFs vs MNFs), size-wise (small, medium and large) and sample as a whole using ROA, MBR and industrial & sample averages as measures of firms' performance. Results are obtained employing ratio analysis, pooled regression and multinomial logistic regression models. Wald, panel diagnostic and Hausman tests have been used for selection of models. The study used regression analysis to estimate the significance and impact of independent variables on dependent variable(s) whereas ratio analysis is used to determine segment-wise as well as overall application of WC policy, WCME and determine the quality of CG by Pakistani corporate sector.

Based on ROA as performance measure, regression results show that WC policy significantly affect firms' performance as indicated by a strong positive relationship of WC policy variables (CR 4.065; ATR 4.468; CAR 2.648) all significant at 1% confidence level. Location-wise ratio analysis results based on industrial average show that DFs follow aggressive approach while MNFs follow conservative WC policy. Small and medium firms follow aggressive WC policy while large firms follow conservative WC policy. Our this finding is supported by agency theory

(Jensen & Meckling 1976), envisaging that higher investment in WC by large firms may expect lower profits due to less efficient use of current assets (in other words, agents may sacrifice a part of the profit that belongs to principals for the sake of their own convenience) as against small firms who prefer keeping minimum investment in WC. Since managers show their preference for "funds raised from operations, namely current liabilities" to meet their day to day cash flow needs when they opt for an aggressive WC policy whereas they prefer to finance a larger portion of their current assets "out of long term funds" when they opt for a conservative WC policy. As such the finding of the study is also supported by Pecking Order Theory (Donaldson 1961, Myers & Mailuf, 1984), stating that managers have their order of preference in selecting sources of finance.

However, analyzing entire sample as a whole, firms are following aggressive WC policy. The impact of WC policy on firms' performance is more than all other factors in corporate sector of Pakistan. The performance of MNFs and large firms (following conservative WC policy) is better than the performance of DFs and small firms (following aggressive approach). The performance of MNFs and large firms (following conservative WC policy) should have been weaker than the performance of DFs and small firms (following aggressive approach) as the earlier category of firms (MNFs and large) invest more in current assets as compared to the later (DFs and small). This trend is not observed in these finding however this also does not affect firms' capital structures. As such these findings do not support trade off theory (Bancel & Mittoo, 2004; Brounen et al 2006) advocating a trade off between cost and benefit however support M & M's (1958) theory of investment stating that firms' value has no relevance with its capital structure.

Overall CG in Pakistan is weak however the governance practices being followed by domestic and small firms are comparatively better than those followed by multinational and large firms. This finding also provide support for agency theory with regard to quality of CG, i.e. larger size leads to higher level of agency problems whereas smaller firms (and most of the DFs in Pakistan are smaller than MNFs) are closely managed by majority shareholders and therefore have fewer agency issues. These findings suggest that though governance-wise DFs and small firms are better but performance-wise they are weaker than MNFs and large firms just because of the WC policies these firms follow.

Logistic regression results show that ROA and MC are the variables determining the WC policy of firms significant at 5% and 1% respectively. ROA having positive coefficient (0.06) influences firms' to adopt conservative WC policy to which we have assigned dummy '2' whereas MC having negative coefficient (-0.35) influences firms' to adopt hedging WC policy to which we have assigned dummy '0'. Overall, correct predictions for the study employing logistic regression model work out to be 71.9% showing fitness of the model used for analysis. Support and no support by the results of the study regarding the hypotheses tested are reported in table 5-1.

Table 5-1: Summary of Hypotheses

Hypothesis No.	Description	Outcome			
		Ratio analysis		Regression analysis	
		IA	SA	ROA	MBR
H1	Size of the firm is positively related with profitability	Supported	Supported	Supported	Supported
H2	The performance of MNFs is better than the performance of DFs	Supported	Supported	Supported	Supported
H3	Small firms utilize WC more efficiently than large firms	Supported	Supported	Not supported	Not supported
H4	MNFs utilize WC more efficiently than DFs	Not supported	Not supported	Not supported	Not supported
H5	The influence and nature of WC policy varies with firms' size and location	Supported	Supported	Supported	Supported
H6	Firms following conservative WC policy yield better financial results	Supported	Not Supported	Size-wise: supported Location-wise: Not supported	Size-wise: supported Location-wise: Not supported
H7	The quality of CG has a positive relationship with firms' performance	--	Not supported	Not supported	Supported
H8	The quality of CG practices varies with	--	Partially supported	Not supported	Partially supported

	size and location of firms				

5.1 Recommendations and Policy Implications

The recommendations of the research can be used by economic planners and corporate experts as policy guidelines and bench mark for improving the corporate and economic performance of the country. Besides, these recommendations are beneficial for emerging economies particularly and developed economies generally across the globe as the sample size contain data of MNFs having influence in different countries and parts of the world. Important recommendations derived on the basis of the study are:

1. Economic and financial regulators can get guidance from the findings of the study to adjust national level corporate planning. State Bank of Pakistan (the central bank of the country) can amend its prudential regulations with regard to maintaining liquidity by corporate units according to the results of the study.

2. The study analyzed the corporate sector of Pakistan from various aspects such as size, location, liquidity maintenance and CG etc, the recommendations are very much useful to guide the policy makers in formulating strategies on national level which will ultimately pave way for uplift of corporate performance and living standard of the people.

3. Corporate units can directly get guidance and adopt the findings of the study in their corporate planning to improve their performance.

4. Apart from national level regulators and policy makers, the findings of the study are equally useful for emerging economies like Pakistan (as well as developed economies) across the globe due to inclusion of a major chunk of MNFs in sample size.

5. Since WCM is a vast field of finance influencing various areas such as CG, behavioral finance etc., the findings and methodology of the research can be used by research students on further exploring the field.

5.2   Foundation for Future Research

The study provides comprehensive and to the point information and bases of decision making to investors, managers, policy makers, regulators and general public.   The study provides a foundation for further research to overcome the limitations of this study by:

1. Adding other bases of firms' categorization such as regional, nature of business, legal status (proprietorship, partnership and company)
2. Adding more variables such as behavioral variables
3. Extending the research to other countries by comparing the WC practices followed by corporate units of one country with the same nature of corporate units of another country.
4. Besides secondary data, addition of primary data can further improve the quality and reliability of results.

REFERENCES

Aabo, T., C. Pantzalis, and J.C. Park (2015). Multinationality and Opaqueness, Journal of Corporate Finance, 30: 65-84

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. International Journal of Managerial Finance, 8(2), 155-179.

Afza, T. and M.S. Nazir (2008). Working Capital Approaches and Firm's Returns, Pakistan Journal of Commerce and Social Sciences, 1(1): 25-36

Aktas, N., E. Croci and D. Petmezas (2015). Is Working Capital Management Value Enhancing? Evidence From Firm Performance and Investments, Journal of Corporate Finance, 30: 98-113

Alchian, A.A. and H. Demsetz (1972). Production, Information Costs, and Economic Organization, The American Economic Review, 62 (5): 777–795.

Ali, S. (2011). Working Capital Management and the Profitability of the Manufacturing Sector: A Case Study of Pakistan's Textile Industry, Lahore Journal of Economics, 16 (2): 141–178

Al-Mwalla, M. (2012). The Impact of Working Capital Management Policies on Firm's Profitability and Value: The Case of Jordan, International Research Journal of Finance and Economics, 85:147-153

Ameer, R. (2010). The Role of Institutional Investors in the Inventory and Cash Management Practices of Firms in Asia, Journal of Multinational Financial Management, 20 (2, 3): 126-143

Anand, M, C.P. Gupta. (2001). Working Capital Performance of Corporate India: An Empirical Survey for the Year 2000–2001. Management and Accounting Research, 4(4): 35–65

Antoniou, A., Y. Guney and K. Paudyal (2008). The Determinants of Capital Structure: Capital Market-Oriented Versus Bank-Oriented Institutions, Journal of Financial and Quantitative Analysis, 43 (1): 59-92, DOI: 10.1017/S0022109000002751

Arestis, P., M. Nissank and H. Stein (2005). Finance and Development: Institutional and Policy Alternatives to Financial Liberalization Theory, Eastern Economic Journal, 31 (2): 245-263

Baig, V.A. (2009). Working Capital Management: A Comparative Study of Different Ownerships, Management & Change, 13 (1): 85-130

Bancel, F. and U.R. Mittoo (2004). Cross-Country Determinants of Capital Structure Choice: A Survey of European Firms, Financial Management, 33(4): 103-132

Barbosa, N., and H. Louri (2005). Corporate Performance: Does Ownership Matter? A Comparison of Foreign- and Domestic-Owned Firms in Greece and Portugal. Review of Industrial Organization, 27(1): 73-102.

Batten, J.A. and X. Vinh Vo (2015). Foreign Ownership in Emerging Stock Markets, Journal of Multinational Financial Management, Vol. 32-33:15–24

Bei, Z. and W.P. Wijewardana (2012). Working Capital Policy Practice: Evidence From Sri Lankan Companies, Procedia - Social and Behavioral Sciences, 40: 695–700

Bhattacharyya, H. (1987). Towards a Comprehensive Theory of Working Capital: A Techno-Financial Approach, Economic and Political Weekly, 22(35): 101-110

Bierman, H., K. Chopra and J. Thomas (1975). Ruin Consideration: Optimal Working Capital and Capital Structure, Journal of Financial and Quantitative Analysis, 10(1): 119-128

Bigelli, M. and J.S. Vidal (2012). Cash Holdings in Private Firms, Journal of Banking & Finance, 36: 26-35

Brigham, E.F. and J.F. Houston (2013). Fundamentals of Financial Management. 13th Edition. Mason, USA: South-Western Cengage Learning

Breusch, T. S. and A.R. Pagan (1979). A Simple Test for Heteroskedasticity and Random Coefficient Variation, Econometrica, 47(5): 1288-1290

Brounen, D., A.D. Jong and K. Koedijk (2006). Capital Structure Policies in Europe: Survey Evidence, Journal of Banking & Finance, 30 (5): 1409-1442

Buckley, P.J. and P.N. Ghauri (2004). Globalization, Economic Geography and the Strategy of Multinational Enterprises, Journal of International Business Studies, 35: 81-98.

Bussière, M. and K. Phylaktis (2016). Emerging Markets Finance: Issues of International Capital Flows – Overview of the Special Issue, Journal of International Money and Finance 60:1–7

Butt, S.A. 2013. 'Corporate governance for Pakistan', 4th edition, Lahore, Pakistan

Byoun, S. and X. Xu (2013). Why Do Some Firms Go Debt Free? Asia-Pacific Journal of Financial Studies, 42: 1-38

Byrne, J.P. and N. Fiess (2016). International Capital Flows to Emerging Markets: National and Global Determinants, Journal of International Money and Finance, 61: 82–100

Caballero, S.B., P.J.G. Teruel and P.M. Solano (2014). Working Capital Management, Corporate Performance and Financial Constraints, Journal of Business Research, 67 (3): 332–338

Caballero, S.B., P.J.G. Teruel and P.M. Solano (2012). How Does Working Capital Management Affect the Profitability of Spanish SMEs? Small Business Economics, 39 (2): 517-529

Caves, R.E. (2007). Multinational Enterprise and Economic Analysis, A text book published by Cambridge University Press, Cambridge

Charitou, M.S., M. Elfani and P. Lois (2010). The Effect of Working Capital Management on Firm's Profitability: Empirical Evidence from an Emerging Market, Journal of Business & Economics Research, 8 (12): 63-68

Chen, H. (1999). International Performance of Multinationals: A Hybrid Model, Journal of World Business, 34 (2): 157-170

Chong, A. and F. López-de-Silanes (2006). Corporate Governance and Firm Value in Mexico, Working Paper #564, Inter-American Development Bank 1300 New York Avenue, N.W. Washington, DC 20577 , 1-77

Christensen, J., P. Kent, J. Routledge and J. Stewart (2015). Do Corporate Governance Recommendations Improve the Performance and Accountability of Small Listed Companies?, Accounting and Finance, 55: 133–164

Chukwunweike, E.V. (2014). The Impact of Liquidity on Profitability of Some Selected Companies: The Financial Statement Analysis (FSA) Approach, Research Journal of Finance and Accounting, 5: 81-90.

Clarke, T. (2004). Theories of Corporate Governance: The Philosophical Foundations of Corporate Governance, Routledge Taylor & Francis Group, New York

Connor, G. and S. Sehgal (2001). Tests of the Fama and French Model in India, Discussion Paper, 379. Financial Markets Group, London School of Economics and Political Science, London UK.

Dalbor, M.C., A. Kim and A. Upneja (2004). An Initial Investigation of Firm Size and Debt Use by Small Restaurant Firms, Journal of Hospitality Financial Management, 12(1): 41-48

Dasilas , A. and N. Papasyriopoulos (2015). Corporate Governance, Credit Ratings and the Capital Structure of Greek SME and Large Listed Firms, Small Business Economics, 45 (1): 215-244

DeAngelo, H. and R. Roll (2015). How Stable Are Corporate Capital Structures?, The Journal of Finance, LXX(1): 373-418

Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? Journal of Business Finance and Accounting, 30(3 & 4): 573-587

Dimelis, S. and H. Louri (2002). Foreign Ownership and Production Efficiency: A Quantile Regression Approach. Oxford Economic Papers, 54(3): 449-469

Dittmar, A. and J. M., Smith (2007). Corporate Governance and the Value of Cash Holdings, Journal of Financial Economics, 83: 599–634

Donaldson, G. (1961). Corporate Debt Capacity, Book Published by Bear Books

Driver, C. (2006). Business Optimism for Small, Medium and Large Firms: Does it Explain Investment? Tanaka Business School Discussion Papers: TBS/DP06/43

Du J. and S. Girma (2009). Source of Finance, Growth and Firm Size Evidence from China, United Nation University Research Paper No. 2009/03: 1-34

Dunning, J.H. (1988). The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions, Journal of International Business Studies, 19: 1-31

Dunning J.H.(1998). Location and the Multinational Enterprises: A Neglected Factor? Journal of International Business Studies, 29(1): 45-66

Edmunds, J.C. (1983). Working Capital Management in Multinational Companies: An Integrated Approach, Management International Review

Eisenhardt, K.M. (1989). Agency Theory: An Assessment and Review, The Academy of Management Review, 14 (1): 57-74

Emery, G. W. (1987). An Optimal Financial Response to Variable Demand, Journal of Financial and Quantitative Analysis, 22: 209-225

Faden, C. (2014). (Book title) Optimizing Firm Performance, (Book subtitle) Alignment of Operational Success Drivers on the Basis of Empirical Data, (Publisher) Gabler Verlag, Springer Fachmedien Wiesbaden, (1st ed), DOI 10.1007/978-3-658-02746-9_2

Fama, E.F. (1965). Random Walks in Stock Market Prices, Financial Analysts Journal, 21(5): 55-59

Fama, E.F. and K.R. French (1992). The Cross-Section of Expected Stock Returns, The Journal of Finance, 47(2): 427-465

Fama, E.F. and M.C. Jenson (1983). Separation of Ownership and Control, *Journal of Law and Economics*, 26(2): 301-325

Farooqi, J., O. Harris and T. Ngo (2014). Corporate Diversification, Real Activities Manipulation and Firm Value, Journal of Multinational Financial Management, 27: 130-151, doi:10.1016/j.mulfin.2014.06.010

Fazzari, S.M. and B.C. Petersen (1993). Working Capital and Fixed Investment: New Evidence on Financing Constraints, The RAND Journal of Economics, 24 (3): 328-342

Frank, I. (1980). Foreign Enterprise in Developing Countries, The John Hopkins University Press, Baltimore

Gentry, J.A. (1988). State of the Art of Short-Run Financial Management, Financial Management, 17(2): 41-57

Gentry, J.A., R. Vaidyanathan and H.W. Lee (1990). Weighted Cash Conversion Cycle, Financial Management, 19 (1): 90-99

Gill, A., Biger, N., & Mathur, N. (2010). The relationship between working capital management and profitability: Evidence from the United States. Business and Economics Journal, 10(1), 1-9.

Giovannetti, G., E. Marvasi and M. Sanfilippo (2015). Supply Chains and the Internationalization of Small Firms, Small Business Economics, 44 (4): 845-865

Grant, R.M. (1987). Multinationality and Performance among British Manufacturing Companies, Journal of International Business Studies, 18 (3): 79-89

Guest, P.M. (2009). The Impact of Board Size on Firm Performance: Evidence from the UK, The European Journal of Finance, 15 (4): 385-404

Guo, L., P. Lach and S. Mobbs (2015). Tradeoffs Between Internal and External Governance: Evidence from Exogenous Regulatory Shocks, Financial Management, 44 (1): 81 - 114

Guthmann, H.G. and H.E. Dougall (1948). Corporate Financial Policy, Second edition, (text book) Published by Prentice-Hall

Hansen, G.S. and B. Wernerfelt (1989). Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors, Strategic Management Journal, 10(5): 399-411

Harford, J., S.A. Mansi and W.F. Maxwell (2008). Corporate Governance and Firm Cash Holdings in the US, Journal of Financial Economics, 87 (3): 535–555

Hausman, J. A. (1978). Specification Tests in Econometrics, Econometrica, 46 (6): 1251-1271

Hennart, J.F. and Y.R. Park (1994). Location, Governance and Strategic Determinants of Japanese Manufacturing Investment in the United States, Strategic Management Journal, 15: 419-436

Hermalin, B.E. and M.S. Weisbach (2003). Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature, FRBNY Economic Policy Review, April Issue, pp 7-26

Hosmer, D. W. Jr. and, S. Lemeshow (2000). Applied Logistic Regression (2nd ed.). New York: Wiley

Hood N. and S. Young (1979). The Economics of Multinational Enterprise, Longman, London

Hussain, A., Syed U. Farooq and Kaleem Ullah Khan (2012). Aggressiveness and Conservativeness of Working Capital: A Case of Pakistani Manufacturing Sector, European Journal of Scientific Research, 73 (2): 171-182

Hymer, S.H.(1960). The International Operations of National Firms, Ph.D. Dissertation, Massachusetts Institute of Technology

Jensen, M,C. and W.H. Meckling (1976). Theory of the Firm, Managerial Behavior, Agency Costs and Ownership Structures, Journal of Financial Economics, 3(4): 305-360

Jurajda S, Stancik J, (2012): Foreign Ownership and Corporate Performance: The Czech Republic at EU Entry, *Finance a úvěr-Czech Journal of Economics and Finance*, 62 (4): 306-324

Kamran and A. Shah (2014). The Impact of Corporate Governance and Ownership Structure on Earnings Management Practices: Evidence from Listed Companies in Pakistan, The Lahore Journal of Economics, 19 (2): 27-70

Kapopoulos, P. and S. Lazaretou (2007). Corporate Ownership Structure and Firm Performance: Evidence from Greek Firms. Corp. Gov. Int. Rev. 15 (2): 144–158.

Kim, C.S., D. C. Mauer and A.E.Sherman (1998). The Determinants of Corporate Liquidity: Theory and Evidence, Journal of Financial and Quantitative Analysis, 33 (3): 335-359 DOI: http://dx.doi.org/10.2307/2331099

Kim, J.W. (2010). Assessing the Long-Term Financial Performance of Ethical Companies, Journal of Targeting, Measurement and Analysis for Marketing, 18 (3/4): 199–208

Köksal, B. and C. Orman (2015). Determinants of Capital Structure: Evidence from a Major Developing Economy, Small Business Economics, 44 (2): 255-282

Kim, J.B. and T.M. Li (2014). Multinationals' Offshore Operations, Tax Avoidance, and Firm-Specific Information Flows: International Evidence, Journal of International Financial Management & Accounting, 25 (1): 38-89

Krishnan, G.V., K.K. Raman, K. Yang and Y. Wei (2011). CFO/CEO-Board Social Ties, Sarbanes-Oxley, and Earnings Management, Accounting Horizons, 25(3): 537–557

Lang, L.H. P. and R.M. Stulz (1994). Tobin's q, Corporate Diversification and Firm Performance, Journal of Political Economy, 102 (6): 1248-1280

Larimo, J., H.L. Nguyen and T. Ali (2016). Performance Measurement Choices in International Joint Ventures: What Factors Drive Them?, Journal of Business Research, 69 (2): 877-88

Lavelle, L. (2002). Enron: How Governance Rules Failed, Business Week, 21: 28–29

Lee, S., M. Kim and N.Wallace (2015). Value Relevance of Multinationality: Evidence from Korean Firms, Journal of International Financial Management & Accounting, 26 (2): 111–149

Lee, Y. and K.H. Chung (2015). Investment Duration and Corporate Governance, Asia-Pacific Journal of Financial Studies, 44: 24-58

Lenaerts, K. and B. Merlevede (2015). Firm size and Spillover Effects from Foreign Direct Investment: the Case of Romania, Small Business Economics, 45 (3): 595-611

Lev, B. and S. Sunder (1979). Methodological Issues in the Use of Financial Ratios, Journal of Accounting and Economics 1: 187-210

Likert, R. (1932). A Technique for the Measurement of Attitudes, Archives of Psychology, 140: 1–55.

Liu, Y., Z. Wei and F. Xie (2014). Do Women Directors Improve Firm Performance in China?, Journal of Corporate Finance, 28: 169-184

Luo, Y. and J.J. Tan (1998). A comparison of Multinational and Domestic Firms in an Emerging Market: A Strategic Choice Perspective, Journal of International Management, 4 (1): 21–40

Maimbo, S.M. and M. Melecky (2016). Financial Policy in Practice: Benchmarking Financial Sector Strategies around the World, Emerging Markets Finance and Trade, 52 (1): 204-222 doi: 10.1080/1540496X.2015.1012396

Majumdar, S.K. (1997). The Impact of Size and Age on Firm-Level Performance: Some Evidence from India. Review of Industrial Organization, 12 (2). 231–241

Markusen, J.R. (1995). The Boundaries of Multinational Enterprises and the Theory of International Trade, Journal of Economic Perspectives, 9(2): 169–189

Marx, K. (1867). The Process of Production of Capital, (1st edition), Moscow, USSR, Progress Publishers

Miller, M.H. and F. Modigliani (1958). The Cost of Capital, Corporation Finance and the Theory of Investment, The American Economic Review, 48(3): 261-297

Milton W. Ndlovu1, M.W., B. Thomas Bhiri, M. Tendekayivanhu, and Hlahla, B.P. (2013). A Comparative Analysis of the Corporate Governance Practices in Multinational and Domestic Banks in Zimbabwe, Journal of Emerging Trends in Economics and Management Sciences (JETEMS), 4(5):473-480

Mirza N. and A. Afzal (2011). Size and Value Premium in International Portfolios: Evidence from 15 European Countries, Finance a úvěr-Czech Journal of Economics and Finance, 61 (2): 173-190

Mirza, N., S. Shahid (2008). Size and Value Premium in Karachi Stock Exchange, The Lahore Journal of Economics, 13(2): 1-26

Morris, J.R. (2009). The Role of Cash Balances in Firm Valuation, Journal of Financial and Quantitative Analysis, 18(4): 533-545 DOI: http://dx.doi.org/10.2307/2330946

Mueller, S. and J. Stegmaier (2015). Economic Failure and the Role of Plant Age and Size, Small Business Economics, 44 (3): 621-638

Myers, S.C. and N.S. Mailuf (1984). Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have, Journal of Financial Economics 13: 187-221

Najjar, N.J. (2013). Can Financial Ratios Reliably Measure the Performance of Banks in Bahrain? International Journal of Economics and Finance; 5 (3): 152-163

Nasif, F. and ALShubiri (2011). The Effect of Working Capital Practices on Risk Management: Evidence from Jordan, Global Journal of Business Research; 5 (1)

Nason, R.S., A. McKelvie and G.T. Lumpkin (2015). The Role of Organizational Size in the Heterogeneous Nature of Corporate Entrepreneurship, Small Business Economics, 45 (2): 279-304

Nazir, M.S. and T. Afza (2009). Impact of Aggressive Working Capital Management Policy on Firms' Profitability, The IUP Journal of Applied Finance, 15 (8): 2009, 19-30

Newton, A.N. (2015). Executive Compensation, Organizational Performance, and Governance Quality in the Absence of Owners, Journal of Corporate Finance, 30: 195-222

Nguyen, T., H.G. Nguyen (Lily) and X. Yin (2015). Corporate Governance and Corporate Financing and Investment During the 2007-2008 Financial Crisis, Financial Management, (Spring): 115 - 146

Nielson, J. (2002). Trade Credit and The Bank Lending Channel, Journal of Money, Credit and Banking, 34: 226-253

Nikolovova P. (2013). Sourcing Patterns of FDI Activity and Their Impact on the Domestic Economy, Finance a úvěr-Czech Journal of Economics and Finance, 63 (3): 288-302

Noorderhaven, N.G. and Harzing, A (2003). "The "country-of-origin effect" in Multinational Corporations: Sources, Mechanisms and Moderating Conditions, Management International Review, 43 (special issue 2): 47-66.

O'Brien R.M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors, Quality & Quantity , 41: 673-690

Ogundipe S.E., A. Idowu and L.O. Ogundipe (2012). Working Capital Management, Firms' Performance and Market Valuation in Nigeria, International Journal of Social, Education, Economics and Management Engineering, 6: 19-23

Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms, International Review of Business Research Papers, 2 (2): 45 -58

Padachi, K., C. Howorth and M.S. Narasimhan (2012). Working Capital Financing Preferences: The Case of Mauritian Manufacturing Small and Medium-Sized Enterprises (SMEs), Asian Academy of Management Journal of Accounting and Finance, 8(1): 125–157

Page, E. S. (1954). Continuous Inspection Schemes, Biometrika, 41 (1): 100-115

Palombini, N.V.N. and W.T. Nakamura (2012). Key Factors in Working Capital Management in the Brazilian Market, Revista de Administração de Empresas, 52 (1): 55-69

Panda, A. (2012). The status of working capital and its relationship with sales: An empirical investigation of Andhra Pradesh Paper Mills Ltd (India), International Journal of Commerce and Management, 22 (1):36 - 52

Park, C. J.W. Gladson (1963). Working Capital, The Macmillan Co, New York (Book)

Park, R. E. (1966). Estimation with Heteroscedastic Error terms, Econometrica, 34 (4): 888

Peng, C.Y.J, K.L. Lee and G.M. Ingersoll (2002). An Introduction to Logistic Regression Analysis and Reporting, The Journal of Educational Research, 96 (1): 3-14

Penrose, E.T. (1959). The Theory of the Growth of the Firm, Oxford University Press, Amazon.com

Perfect, S.B. and Wiles, K (1994). Alternative Constructions of Tobin's Q: An Empirical Comparison, Journal of Empirical Finance, 1: 313-341

Rajan, R. and Zingales, L. (1998), Financial Dependence and Growth, The American Economic Review 88: 559-586.

Rhee, M. and J.H. Lee (2008). The Signals Outside Directors Send to Foreign Investors: Evidence from Korea. Corp. Gov.Int. Perspect. 16 (1): 41–51

Richards V.D. and E.J. Laughlin (1980). A Cash Conversion Cycle Approach to Liquidity Analysis, Financial Management, 9 (1): 32-38

Rugraff, E. and Hansen, M (2011). Multinational Corporations and Local Firms in Emerging Economies. Amsterdam University Press, Amsterdam

Sagan, J. (1955). Towards a Theory of Working Capital Management, The Journal of Finance, 10: 121-129

Sagner, J. (2014). Working Capital Management: Applications and Case Studies, (Wiley) ISBN: 978-1-118-93383-1

Santos, J.B. and L.A.L. Brito (2012). Toward a Subjective Measurement Model for Firm Performance, Brazilian Administration Review, (special issue) 9: 95-117

Schiff, M. and Z. Lieber (2012). A Model for the Integration of Credit and Inventory Management, Journal of Finance, 29(1): 133-140

Shah, S., S. Amjad. SAF. Hasnu and S.M.A. Shah (2010). Financing the Current Assets: Approach Followed by Small and Medium Enterprises in Pakistan, Interdisciplinary Journal of Contemporary Research in Business, 2(7): 136-143

Shah, Syed Zulfiqar Ali. (2009). Corporate governance and financial performance A comparative study of developing and developed Markets (Unpublished doctoral dissertation). Mohammad Ali Jinnah University, Islamabad, Pakistan.

Sharma, A., & Kumar, S. (2011). Effect of working capital management on firm profitability empirical evidence from India. Global Business Review, 12(1), 159-173.

Sharpe, W.F. (1964). Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk, The Journal of Finance, 19 (3): 425-442

Sila, V., A. Gonzalez and J. Hagendorff (2016). Women on Board: Does Boardroom Gender Diversity Affect Firm Risk?, Journal of Corporate Finance, 36: 26-53

Simutin, M. (2010). Excess Cash and Stock Returns, Financial Management, 39 (3): 1197–1222

Singh, D.P. (2011). Net Working Capital Level and Return on Capital Employed in Firms of Cement Industries in India, VSRD International Journal of Business & Management Research, 1(4): 269-280

Smith, A. (1776). The Wealth of Nations, Modern Library Edition, New York, Random House, 1937

Smith, K.V (1973). State of the Art of Working Capital Management, Financial Management, 2 (3): 50-55

Spencer, D.K. (2010). President and CEO, Midland Area Community Foundation, Council on Foundations, USA

Stone, B.K. (1973). Cash Planning and Credit Line Determination with a Financial Statement Simulator: A Case Report on Short-Term Financial Planning, Journal of Financial and Quantitative Analysis, 8 (5): 711-729

Stone, B.K. (1975). Allocating Credit Lines, Planned Borrowing and Tangible Services Over a Company's Banking System, Financial Management, 4 (2): 65-78

Stone, B.K. (2012). The Design of a Company's Banking System, The Journal of Finance, 38 (2): 373-385

Tallman, S. and J. Li (1996). Effects of International Diversity and Product Diversity on the Performance of Multinational Firms, Academy of Management Journal, 39 (1): 179-196

Tariq, Y.B. (2014). Impact of Corporate Governance Code on Firm Performance: A Comparative Analysis of Pakistan and Malaysia (Ph.D Dissertation)

Tariq, Y.B. and Z. Abbas (2013). Compliance and Multidimensional Firm Performance: Evaluating the Efficacy of Rule-Based Code of Corporate Governance, Economic Modelling, 35(0): 565-575

Teruael, P.J.G. and P.M. Solano (2007). Short-term Debt in Spanish SMEs, International Small Business Journal, 25 (6): 579-602

Teruel, P.J.G; P.M. Solano (2007). Effects of Working Capital Management on SME Profitability, International Journal of Managerial Finance, 3 (2): 164 – 177

Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory, Journal of Money, Credit and Banking, 1 (1): 15-29

Vahid, T.K., E. Ghanavati, M.A. khosroshahi and E. Mohammadreza (2012). Working Capital Management and Corporate Performance: Evidence from Iranian Companies', Procedia-Social and Behavioral Sciences, 62: 1313–18.

VanHorne, J. C. and J.M. Wachowicz (2009). Fundamentals of Financial Management. 13th Edition. Harlow. FT Prentice Hall.

Vinh, V. X. (2015). Foreign Ownership and Stock Return Volatility – Evidence from Vietnam, Journal of Multinational Financial Management, 30: 101–109

Vithessonthia, C. and J. Tongurai (2015). The Effect of Firm Size on the Leverage–Performance Relationship During the Financial Crisis of 2007–2009, Journal of Multinational Financial Management, 29: 1-29

Wald, A. (1943). Tests of Statistical Hypotheses Concerning Several Parameters When the Number of Observations is Large, Transactions of the American Mathematical Society, 54 (3): 426-482

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

Weston J. F. and E.F. Brigham, (1979). Essentials of Managerial Finance, 5th ed., Hinsdale, Ill., The Dryden Press

Whited, Toni M. and Erickson, Timothy, On the Information Content of Different Measures of Q (2001). Available at SSRN: http://ssrn.com/abstract=279315 or http://dx.doi.org/10.2139/ssrn.279315

Wilner, B.S. 2000. The exploitation of relationships in financial distress, the case of trade credit, Journal of Finance, 55: 153-178.

Yazdanfar, D. and P. Ohman (2014). The Impact of Cash Conversion Cycle on Firm Profitability: An Empirical Study Based on Swedish Data, International Journal of Managerial Finance, 10 (4): 442 – 452

Yu, C.M. and K. Ito (1988). Oligopolistic Reaction and Foreign Direct Investment: the Case of the US Tire and Textile Industries, Journal of International Studies, 19: 449-460

Yusuf, B.R. and K.A. Idowu (2012). An Investigation of the Effect of Aggressive Working Capital Technique on the Performance of Manufacturing Firms in Nigeria, International Research Journal of Finance & Economics, (96): 90

Yu, X, P. Zhang and Y. Zheng (2015). Corporate Governance, Political Connections, and Intra-Industry Effects: Evidence from Corporate Scandals in China, Financial Management, (spring): 49 - 80

Zeng, S. and L. Wang (2015). CEO Gender and Corporate Cash Holdings: Are Female CEOs More Conservative? Asia-Pacific Journal of Accounting & Economics, 22 (4): 449-474

Zhang, M., W. Zhang and S. Zhang (2016). National Culture and Firm Investment Efficiency: International Evidence, Asia-Pacific Journal of Accounting & Economics, 23 (1): 1-21

Assumptions and calculations

1. **Location**

   Location used in this study shows ownership, control and operation of a firm.

2. **Domestic firm**

   A domestic firm is one which is owned, controlled and operated by Pakistani citizen (s).

3. **Multinational firm**

   For the purpose of this study, a firm is considered to be a multinational if:

   - It is a joint venture of two or more countries

   - It has a technical collaboration with a foreign country

   - It operates in more than one country

4. **Short Term Borrowing**

   Since no breakdown for current liabilities is available for 2004, for each company the same proportion of short term borrowing has been used as is disclosed by data for 9 years (2005-2013) for which break down is available to arrive at a percentage for this year using the following formula:

   $$\frac{Sum\ of\ short\ term\ borrowing\ for\ nine\ years\ from\ 2005\ to\ 2013}{Sum\ of\ current\ liabilities\ for\ nine\ years\ from\ 2005\ to\ 2013} \quad x \quad 100$$

   Then this percentage is applied to the current liabilities of 2004 for each firm to calculate short term borrowing

5. **Industrial average**

   IA is that calculated by State Bank of Pakistan for each economic sector and information available in the document "Balance Sheet Analysis".

6. **Sample average**

   Sample average is calculated using the following formula:

   $$\frac{Sum\ of\ variable\ amount\ for\ the\ period\ of\ data\ for\ all\ firms\ in\ a\ sector}{No.\ of\ firms\ in\ a\ sector\ x\ No.\ of\ years\ (data\ period)}$$

7. Market capitalization

Market capitalization has been determined on the basis of stock rate available as on 31st December (or last available rate) of each year taking the following steps:

- Picked share paid up capital and face value per share from State Bank's document "Balance Sheet Analysis".

- Divided paid up capital with the face value to get number of shares.

- Picked market value per share from Pakistan Stock Exchange website.

- Calculated market capitalization by multiplying number of shares with the market value per share.

Sample Companies

S. No	Sector/firm	S. No	Sector/firm
	Textiles		**Sugar**
1	Al-Qadir Textile Mills	36	Al-Abbas Sugar Mills
2	Ali Asghar Textiles	37	Al-Noor Sugar Mills
3	Ahmed Hassan Textile Mills Ltd.	38	Haseeb Waqas Sugar Mills
4	Azgard Nine Ltd.	39	Shahtaj Sugar Mills
5	Gulshan Spinning Mills Ltd.	40	Baba Farid Sugar Mills Ltd.
6	Babri Cotton Mills Ltd.	41	Chashma Sugar Mills Ltd.
7	Bannu Woollen Mills Ltd.	42	Dewan Sugar Mills
8	Bilal Fibres Ltd.	43	Faran Sugar Mills
9	Bhanero Textile Mills	44	Habib Sugar Mills
10	Chakwal Spinning Mills Ltd.	45	Kohinoor Sugar Mills
11	Blessed Textiles	46	Mehran Sugar Mills
12	D.M. Textile Mills Ltd.	47	Mirpurkhas Sugar Mills
13	Din Textile Mills	48	Noon Sugar Mills
14	Dewan Khalid Textile Mills Ltd.	49	Sanghar Sugar Mills
15	Dewan Mushtaq Textile Mills Ltd.	50	Shakarganj Sugar Mills
16	Dewan Textile Mills Ltd.	51	The Premier Sugar Mills
17	Ghazi Fabrics International Ltd.		**Chemicals, & Pharmaceuticals**
18	Gul Ahmed Textile Mills Ltd.	52	Buxly Paints Ltd
19	Gadoon Textile Mills Ltd.	53	Bawany Air Products Ltd.
20	Gulistan Spinning Mills Ltd.	54	Mandviwala Mauser Plastic Industries
21	Gulistan Textile Mills Ltd.	55	Biafo Industries Ltd
22	Janana De Malucho Textile Mills	56	Descon Chemicals Ltd.
23	Elahi Cotton Mills Ltd.	57	Rupali Polyester
24	Kohat Textile Mills Ltd.	58	Ittehad Chemicals Ltd
25	Ellcot Spinning Mills Ltd.	59	Leiner Pak Gelatine Ltd.
26	Kohinoor Weaving Mills Ltd.	60	Nimir Industrial Chemicals Ltd.
27	Prosperity Weaving Mills	61	Dewan Salman Fibre
28	Kohinoor Textile Mills Ltd.	62	Sitara Chemical Industries Ltd.
29	Faisal Spinning	63	Wah Nobel Chemicals Ltd .
30	Nagina Cotton Mills Ltd.	64	Ferozsons Laboratories Ltd.
31	Nishat Mills Ltd.	65	Highnoon Laboratories Ltd.
32	Fazal Cloth Mills	66	Berger Paints Pakistan Ltd
33	Saif Textile Mills Ltd.	67	Clariant Pakistan Ltd.
34	Fazal Textile	68	Dynea Pakistan Ltd.
35	Glamour Textile Mills	69	Dawood Hercules Chemicals Ltd

70	Engro Corporation Ltd.	113	Indus Motor Co. Ltd.
71	Fauji Fertilizer Company Ltd.	114	KSB Pumps Company Ltd.
72	Fauji Fertilizer Bin Qasim Ltd.	115	Pak Suzuki Motor Company Ltd.
73	ICI Pakistan Ltd.	116	Pakistan Cables Ltd.
74	Pakistan PVC Ltd.	117	Pakistan Engineering Company Ltd
75	United Distributors Pakistan Ltd.	118	Siemens (Pakistan) Engineering Co.
76	Abbott Laboratories (Pakistan) Ltd.		**FMCGs and Foods**
77	GlaxoSmithKline (Pakistan) Ltd.	119	Clover Pakistan Ltd
78	Otsuka Pakistan Ltd.	120	National Foods Ltd.
79	Wyeth Pakistan Ltd	121	Noon Pakistan Ltd.
	Fuel and Energy	122	Mitchell's Fruit Farms Ltd.
80	Attock Refinery Ltd.	123	Shezan International Ltd.
81	Atlas Battery Ltd.	124	Colgate - Polmolive (Pakistan) Ltd.
82	Japan Power Generation Ltd.	125	Nestle Pakistan Ltd
83	Kot Adu Power Co. Ltd.	126	Rafhan Maize Products Co. Ltd.
84	Mari Gas Co	127	Unilever Pakistan Ltd.
85	Oil and Gas Development Corp	128	Murree Brewery Company Ltd.
86	Pakistan State Oil	129	Zeal Pak Cement Factory Ltd.
87	Pakistan Petroleum Ltd.	130	Bestway Cement Ltd.
88	Pakistan Refinery Ltd.	131	Cherat Cement Company Ltd.
89	Sitara Energy Ltd.	132	Dandot Cement Ltd.
90	Southern Electric Power Co. Ltd.	133	D.G.Khan Cement Company Ltd.
91	Sui Northern Gas Pipelines Ltd.	134	Fecto Cement Ltd.
92	Sui Southern Gas Co. Ltd.	135	Fauji Cement Company Ltd.
93	The Hub Power Company Ltd.	136	Gharibwal Cement Ltd.
94	Exide Pakistan Ltd.	137	Kohat Cement Company Ltd.
95	Kohinoor Energy Ltd.	138	Lucky Cement Ltd.
96	National Refinery Ltd.	139	Maple Leaf Cement Factory Ltd.
97	Pakistan Oilfields Ltd.	140	Pioneer Cement Ltd.
98	Shell Pakistan Ltd.	141	Dadex Eternit Ltd.
	Autos, Engineering and Allied	142	Attock Cement Pakistan Ltd.
99	Agriauto Industries Ltd.		**Paper and Board**
100	Bolan Castings Ltd.	143	Cherat Papersack Ltd.
101	Crescent Steel And Allied Products	144	Century Paper and Board Mills Ltd.
102	Dewan Automotive Engineering Ltd	145	Merit Packaging Ltd.
103	Millat Tractors Ltd.	146	Security Papers Ltd.
104	Dewan Farooque Motors Ltd.	147	Pakistan Paper Products Ltd.
105	Pak Elektron Ltd. (PEL)	148	Packages Ltd
106	Singer Pakistan Ltd.		**Tobacco Sector**
107	Atlas Honda Ltd.	149	Khyber Tobacco Company Ltd.
108	Al-Ghazi Tractors Ltd.	150	Pakistan Tobacco Company
109	General Tyre & Rubber Co. Ltd.	151	Philip Morris Pak Ltd.
110	Ghandhara Nissan Ltd.		**Jute Sector**
111	Honda Atlas Cars (Pakistan) Ltd.	152	Suhail Jute Mills Ltd.
112	Hinopak Motors Ltd.	153	Crescent Jute Products Ltd.

Location-wise Sample

Domestic Firms

S.No	Company	S.No	Company
1	Elahi Cotton Mills Ltd.	26	Cherat Papersack Ltd.
2	Mandviwala Plastic Ind	27	Baba Farid Sugar Mills Ltd.
3	D.M. Textile Mills Ltd.	28	The Premier Sugar Mills
4	Crescent Jute Products Ltd.	29	Dewan Sugar Mills
5	Buxly Paints Ltd	30	Bannu Woollen Mills
6	Bilal Fibres Ltd.	31	Chashma Sugar Mills Ltd.
7	Dewan Mushtaq Textile	32	Glamour Textile Mills
8	Bawany Air Products Ltd.	33	Dewan Textile Mills Ltd.
9	Khyber Tobacco Company	34	Prosperity Weaving Mills
10	Suhail Jute Mills Ltd.	35	Gulistan Textile Mills Ltd.
11	Dewan Automotive Eng	36	Descon Chemicals Ltd.
12	Gulistan Spinning Mills	37	Wah Nobel Chemicals Ltd .
13	Babri Cotton Mills Ltd.	38	Bolan Castings Ltd.
14	Dewan Khalid Textile	39	Ellcot Spinning Mills Ltd.
15	Al-Qadir Textile Mills	40	Faran Sugar Mills
16	Ali Asghar Textiles	41	Saif Textile Mills Ltd.
17	Kohat Textile Mills Ltd.	42	Noon Sugar Mills
18	Chakwal Spinning Mills	43	Sitara Energy Ltd.
19	Ghazi Fabrics Int.	44	Ahmed Hassan Textile
20	Janana De Malucho Textile	45	Kohinoor Weaving Mills
21	Sanghar Sugar Mills	46	Mirpurkhas Sugar Mills
22	Kohinoor Sugar Mills	47	Japan Power Generation
23	Gulshan Spinning Mills	48	Blessed Textiles
24	Merit Packaging Ltd.	49	Zeal Pak Cement Factory
25	Leiner Pak Gelatine Ltd.	50	Nagina Cotton Mills Ltd.
51	Al-Noor Sugar Mills	82	Ferozsons Laboratories Ltd.
52	Mehran Sugar Mills	83	Gul Ahmed Textile Mills
53	Noon Pakistan Ltd.	84	Security Papers Ltd.
54	Faisal Spinning	85	Fazal Cloth Mills
55	Dadex Eternit Ltd.	86	Gharibwal Cement Ltd.
56	Southern Electric Power	87	Kohinoor Textile Mills Ltd.
57	Din Textile Mills	88	Pak Elektron Ltd. (PEL)
58	Bhanero Textile Mills	89	Cherat Cement Company
59	Clover Pakistan Ltd	90	Sitara Chemical Industries
60	Dandot Cement Ltd.	91	Pioneer Cement Ltd.
61	Highnoon Laboratories Ltd.	92	National Foods Ltd.
62	Nimir Industrial Chemicals	93	Kohat Cement Company
63	Dewan Farooque Motors	94	Pakistan Refinery Ltd.
64	Haseeb Waqas Sugar Mills	95	Century Paper and Board

65	Biafo Industries Ltd	96	Maple Leaf Cement Factory
66	Mitchell's Fruit Farms Ltd.	97	Mari Gas Co
67	Shahtaj Sugar Mills	98	Fauji Cement Company
69	Singer Pakistan Ltd.	99	Millat Tractors Ltd.
69	Ittehad Chemicals Ltd	100	Attock Refinary Ltd.
70	Shakarganj Sugar Mills	101	Bestway Cement Ltd.
71	Fecto Cement Ltd.	102	D.G.Khan Cement
72	Rupali Polyester	103	Sui Southern Gas Co. Ltd.
73	Al-Abbas Sugar Mills	104	Nishat Mills Ltd.
74	Habib Sugar Mills	105	Azgard Nine Ltd.
75	Atlas Battery Ltd.	106	Sui Northern Gas Pipelines
76	Shezan International Ltd.	107	Lucky Cement Ltd.
77	Agriauto Industries Ltd.	108	The Hub Power Company
78	Crescent Steel	109	Kot Adu Power Co. Ltd.
79	Gadoon Textile Mills Ltd.	110	Pakistan State Oil
80	Fazal Textile	111	Pakistan Petroleum Ltd.
81	Dewan Salman Fibre	112	Oil and Gas Dev. Corp.

Multinational Firms

113	Pakistan PVC Ltd.	134	Philip Morris Pak Ltd.
114	United Distributors	135	Al-Ghazi Tractors Ltd.
115	Pakistan Paper Products	136	Packages Ltd
116	Dynea Pakistan Ltd.	137	Abbott Laboratories
117	Berger Paints Pakistan Ltd	138	Indus Motor Co. Ltd.
118	Otsuka Pakistan Ltd.	139	ICI Pakistan Ltd.
119	Pakistan Engineering Co	140	National Refinary Ltd.
120	Ghandhara Nissan Ltd.	141	Shell Pakistan Ltd.
121	Exide Pakistan Ltd.	142	Colgate - Polmolive
122	KSB Pumps Company Ltd.	143	GlaxoSmithKline (Pak)
123	Pakistan Cables Ltd.	144	Dawood Hercules
124	General Tyre & Rubber Co.	145	Rafhan Maize Products Co.
125	Murree Brewery Company	146	Siemens (Pakistan) Engg.
126	Wyeth Pakistan Ltd	147	Fauji Fertilizer Bin Qasim
127	Hinopak Motors Ltd.	148	Pakistan Tobacco Company
128	Honda Atlas Cars	149	Unilever Pakistan Ltd.
129	Kohinoor Energy Ltd.	150	Engro Corporation Ltd.
130	Clariant Pakistan Ltd.	151	Pakistan Oilfields Ltd.
131	Attock Cement Pakistan	152	Fauji Fertilizer Company
132	Atlas Honda Ltd.	153	Nestle Pakistan Ltd
133	Pak Suzuki Motor Co		

Size-wise Sample

S.No	Company	S.No	Company
	Small Firms		
1	Elahi Cotton Mills Ltd.	24	Pakistan Paper Products
2	Mandviwala Plastic Ind	25	Kohinoor Sugar Mills
3	D.M. Textile Mills Ltd.	26	Gulshan Spinning Mills
4	Crescent Jute Products Ltd.	27	Merit Packaging Ltd.
5	Buxly Paints Ltd	28	Leiner Pak Gelatine Ltd.
6	Bilal Fibres Ltd.	29	Cherat Papersack Ltd.
7	Dewan Mushtaq Textile	30	Baba Farid Sugar Mills Ltd.
8	Bawany Air Products Ltd.	31	The Premier Sugar Mills
9	Khyber Tobacco Company	32	Dewan Sugar Mills
10	Suhail Jute Mills Ltd.	33	Bannu Woollen Mills Ltd.
11	Dewan Automotive Engg.	34	Chashma Sugar Mills Ltd.
12	Gulistan Spinning Mills	35	Dynea Pakistan Ltd.
13	Babri Cotton Mills Ltd.	36	Glamour Textile Mills
14	Dewan Khalid Textile Mills	37	Dewan Textile Mills Ltd.
15	Pakistan PVC Ltd.	38	Prosperity Weaving Mills
16	Al-Qadir Textile Mills	39	Gulistan Textile Mills Ltd.
17	Ali Asghar Textiles	40	Descon Chemicals Ltd.
18	United Distributors Pak	41	Wah Nobel Chemicals Ltd .
19	Kohat Textile Mills Ltd.	42	Bolan Castings Ltd.
20	Chakwal Spinning Mills	43	Ellcot Spinning Mills Ltd.
21	Ghazi Fabrics International	44	Faran Sugar Mills
22	Janana De Malucho Textile	45	Saif Textile Mills Ltd.
23	Sanghar Sugar Mills	46	Noon Sugar Mills
	Medium Firms		
47	Sitara Energy Ltd.	49	Berger Paints Pakistan Ltd
48	Ahmed Hassan Textile	50	Kohinoor Weaving Mills
51	Mirpurkhas Sugar Mills	80	Shakarganj Sugar Mills
52	Otsuka Pakistan Ltd.	81	Fecto Cement Ltd.
53	Japan Power Generation	82	Rupali Polyester
54	Blessed Textiles	83	Pakistan Cables Ltd.
55	Zeal Pak Cement Factory	84	Al-Abbas Sugar Mills
56	Nagina Cotton Mills Ltd.	85	Habib Sugar Mills
57	Al-Noor Sugar Mills	86	Atlas Battery Ltd.
58	Mehran Sugar Mills	87	Shezan International Ltd.
59	Noon Pakistan Ltd.	88	General Tyre & Rubber Co.
60	Faisal Spinning	89	Agriauto Industries Ltd.
61	Dadex Eternit Ltd.	90	Crescent Steel
62	Southern Electric Power Co	91	Gadoon Textile Mills Ltd.
63	Din Textile Mills	92	Fazal Textile

64	Bhanero Textile Mills	93	Murree Brewery Company
65	Clover Pakistan Ltd	94	Dewan Salman Fibre
66	Dandot Cement Ltd.	95	Ferozsons Laboratories Ltd.
67	Highnoon Laboratories Ltd.	96	Gul Ahmed Textile Mills
68	Nimir Industrial Chemicals	97	Security Papers Ltd.
69	Dewan Farooque Motors	98	Wyeth Pakistan Ltd
70	Pakistan Engineering Co	99	Fazal Cloth Mills
71	Haseeb Waqas Sugar Mills	100	Gharibwal Cement Ltd.
72	Ghandhara Nissan Ltd.	101	Kohinoor Textile Mills Ltd.
73	Biafo Industries Ltd	102	Hinopak Motors Ltd.
74	Mitchell's Fruit Farms Ltd.	103	Pak Elektron Ltd. (PEL)
75	Shahtaj Sugar Mills	104	Honda Atlas Cars
76	Singer Pakistan Ltd.	105	Cherat Cement Company
77	Exide Pakistan Ltd.	106	Sitara Chemical Industries
78	KSB Pumps Company Ltd.	107	Pioneer Cement Ltd.
79	Ittehad Chemicals Ltd		
	Large Firms		
108	National Foods Ltd.	131	National Refinary Ltd.
109	Kohat Cement Company	132	Nishat Mills Ltd.
110	Pakistan Refinery Ltd.	133	Shell Pakistan Ltd.
111	Kohinoor Energy Ltd.	134	Azgard Nine Ltd.
112	Clariant Pakistan Ltd.	135	Sui Northern Gas Pipelines
113	Century Paper and Board	136	Colgate - Polmolive
114	Maple Leaf Cement Factory	137	GlaxoSmithKline
115	Mari Gas Co	138	Dawood Hercules
116	Fauji Cement Company	139	Rafhan Maize Products
117	Attock Cement Pakistan	140	Siemens (Pakistan) Engg
118	Millat Tractors Ltd.	141	Lucky Cement Ltd.
119	Atlas Honda Ltd.	142	Fauji Fertilizer Bin Qasim
120	Attock Refinary Ltd.	143	Pakistan Tobacco Company
121	Pak Suzuki Motor Co	144	The Hub Power Company
122	Philip Morris Pak Ltd.	145	Unilever Pakistan Ltd.
123	Al-Ghazi Tractors Ltd.	146	Kot Adu Power Co. Ltd.
124	Packages Ltd	147	Engro Corporation Ltd.
125	Abbott Laboratories	148	Pakistan State Oil
126	Bestway Cement Ltd.	149	Pakistan Oilfields Ltd.
127	D.G.Khan Cement	150	Fauji Fertilizer Company
128	Sui Southern Gas Co. Ltd.	151	Nestle Pakistan Ltd
129	Indus Motor Co. Ltd.	152	Pakistan Petroleum Ltd.
130	ICI Pakistan Ltd.	153	Oil and Gas Dev. Corp.

Working Capital Policy (Based on Industrial Average and sample as a whole)

S.No	Company	C.R	I.A	Policy	ATR	I.A	Policy	CAR	I.A	Policy
1	Elahi Cotton Mills Ltd.	0.56	0.99	A	0.21	0.66	A	0.120	0.040	C
2	Mandviwala Plastic Ind	0.48	1.24	A	0.39	1.05	A	0.010	0.260	A
3	D.M. Textile Mills Ltd.	0.42	0.99	A	0.14	0.66	A	0.196	0.040	C
4	Crescent Jute Products Ltd.	0.53	1.13	A	0.26	0.68	A	0.012	0.050	A
5	Buxly Paints Ltd	1.16	1.24	A	0.81	1.05	A	0.120	0.260	A
6	Bilal Fibres Ltd.	0.64	0.99	A	0.27	0.66	A	0.032	0.040	A
7	Dewan Mushtaq Textile	0.89	0.99	A	0.51	0.66	A	0.011	0.040	A
8	Bawany Air Products Ltd.	0.28	1.24	A	0.32	1.05	A	2.275	0.260	C
9	Khyber Tobacco Company	0.65	1.20	A	0.38	0.58	A	0.031	0.110	A
10	Suhail Jute Mills Ltd.	1.36	1.13	C	0.96	0.68	C	0.035	0.050	A
11	Dewan Automotive Engg.	0.55	1.38	A	0.23	0.95	A	0.021	0.380	A
12	Gulistan Spinning Mills	0.92	0.99	A	0.26	0.66	A	0.231	0.040	C
13	Babri Cotton Mills Ltd.	0.82	0.99	A	0.14	0.66	A	0.005	0.040	A
14	Dewan Khalid Textile Mills	1.01	0.99	C	0.47	0.66	A	0.008	0.040	A
15	Pakistan PVC Ltd.	1.33	1.24	C	1.28	1.05	C	0.053	0.260	A
16	Al-Qadir Textile Mills	1.00	0.99	C	0.43	0.66	A	0.149	0.040	C
17	Ali Asghar Textiles	0.68	0.99	A	0.43	0.66	A	0.025	0.040	A
18	United Distributors Pak	1.25	1.24	C	0.64	1.05	A	0.056	0.260	A

19	Kohat Textile Mills Ltd.	0.89	0.99	A	0.33	0.66	A	0.002	0.040	A
20	Chakwal Spinning Mills	0.58	0.99	A	0.40	0.66	A	0.051	0.040	C
21	Ghazi Fabrics International	0.70	0.99	A	0.22	0.66	A	0.007	0.040	A
22	Janana De Malucho Textile	0.79	0.99	A	0.19	0.66	A	0.010	0.040	A
23	Sanghar Sugar Mills	0.62	0.76	A	0.28	0.54	A	0.021	0.060	A
24	Pakistan Paper Products	2.92	1.81	C	1.49	1.35	C	0.363	0.140	C
25	Kohinoor Sugar Mills	0.64	0.76	A	-0.08	0.54	A	0.005	0.060	A
26	Gulshan Spinning Mills	1.02	0.99	C	0.34	0.66	A	0.036	0.040	A
27	Merit Packaging Ltd.	0.98	1.81	A	0.53	1.35	A	0.297	0.140	C
28	Leiner Pak Gelatine Ltd.	1.29	1.24	C	0.52	1.05	A	0.012	0.260	A
29	Cherat Papersack Ltd.	1.58	1.81	A	0.66	1.35	A	0.109	0.140	A
30	Baba Farid Sugar Mills Ltd.	0.58	0.76	A	0.38	0.54	A	0.040	0.060	A
31	The Premier Sugar Mills	4.72	0.76	C	4.11	0.54	C	1.560	0.060	C
32	Dewan Sugar Mills	0.92	0.76	C	0.56	0.54	C	0.009	0.060	A
33	Bannu Woollen Mills Ltd.	2.34	0.99	C	0.89	0.66	C	0.016	0.040	A
34	Chashma Sugar Mills Ltd.	0.86	0.76	C	0.34	0.54	A	0.048	0.060	A
35	Dynea Pakistan Ltd.	2.04	1.24	C	1.12	1.05	C	0.136	0.260	A
36	Glamour Textile Mills	0.86	0.99	A	0.40	0.66	A	0.019	0.040	A
37	Dewan Textile Mills Ltd.	1.31	0.99	C	0.64	0.66	A	0.008	0.040	A
38	Prosperity Weaving Mills	1.17	0.99	C	0.64	0.66	A	0.057	0.040	C
39	Gulistan Textile Mills Ltd.	1.00	0.99	C	0.42	0.66	A	0.012	0.040	A

40	Descon Chemicals Ltd.	1.05	1.24	A	0.67	1.05	A	0.020	0.260	A
41	Wah Nobel Chemicals Ltd .	2.28	1.24	C	1.84	1.05	C	0.291	0.260	C
42	Bolan Castings Ltd.	2.13	1.38	C	1.31	0.95	C	0.275	0.380	A
43	Ellcot Spinning Mills Ltd.	1.25	0.99	C	0.44	0.66	A	0.091	0.040	C
44	Faran Sugar Mills	0.91	0.76	C	0.44	0.54	A	0.089	0.060	C
45	Saif Textile Mills Ltd.	0.91	0.99	A	0.39	0.66	A	0.004	0.040	A
46	Noon Sugar Mills	1.06	0.76	C	0.55	0.54	C	0.184	0.060	C
47	Sitara Energy Ltd.	0.96	1.09	A	0.80	1.00	A	1.486	0.190	C
48	Ahmed Hassan Textile	0.84	0.99	A	0.36	0.66	A	0.003	0.040	A
49	Berger Paints Pakistan Ltd	0.99	1.24	A	0.56	1.05	A	0.105	0.260	A
50	Kohinoor Weaving Mills	0.82	0.99	A	0.51	0.66	A	0.042	0.040	C
51	Mirpurkhas Sugar Mills	1.09	0.76	C	0.58	0.54	C	0.024	0.060	A
52	Otsuka Pakistan Ltd.	1.16	1.24	A	0.56	1.05	A	0.010	0.260	A
53	Japan Power Generation	0.67	1.09	A	0.59	1.00	A	0.015	0.190	A
54	Blessed Textiles	1.35	0.99	C	0.42	0.66	A	0.036	0.040	A
55	Zeal Pak Cement Factory	0.64	0.84	A	0.51	0.77	A	0.004	0.080	A
56	Nagina Cotton Mills Ltd.	2.02	0.99	C	1.08	0.66	C	0.533	0.040	C
57	Al-Noor Sugar Mills	0.83	0.76	C	0.28	0.54	A	0.050	0.060	A
58	Mehran Sugar Mills	0.88	0.76	C	0.41	0.54	A	0.031	0.060	A
59	Noon Pakistan Ltd.	0.76	1.24	A	0.51	1.05	A	0.097	0.260	A
60	Faisal Spinning	1.19	0.99	C	0.39	0.66	A	0.031	0.040	A

61	Dadex Eternit Ltd.	1.12	0.84	C	0.37	0.77	A	0.071	0.080	A
62	Southern Electric Power Co	0.38	1.09	A	0.35	1.00	A	0.010	0.190	A
63	Din Textile Mills	1.02	0.99	C	0.53	0.66	A	0.022	0.040	A
64	Bhanero Textile Mills	1.19	0.99	C	0.31	0.66	A	0.024	0.040	A
65	Clover Pakistan Ltd	2.59	0.79	C	2.03	0.52	C	0.547	0.060	C
66	Dandot Cement Ltd.	0.27	0.84	A	0.23	0.77	A	0.010	0.080	A
67	Highnoon Laboratories Ltd.	1.34	1.24	C	0.43	1.05	A	0.038	0.260	A
68	Nimir Industrial Chemicals	0.90	1.24	A	0.62	1.05	A	0.099	0.260	A
69	Dewan Farooque Motors	0.70	1.38	A	0.43	0.95	A	0.026	0.380	A
70	Pakistan Engineering Co	2.58	1.38	C	1.58	0.95	C	0.179	0.380	A
71	Haseeb Waqas Sugar Mills	0.76	0.76	H	0.38	0.54	A	0.066	0.060	C
72	Ghandhara Nissan Ltd.	1.08	1.38	A	0.42	0.95	A	0.048	0.380	A
73	Biafo Industries Ltd	2.01	1.24	C	1.53	1.05	C	0.324	0.260	C
74	Mitchell's Fruit Farms Ltd.	1.25	0.79	C	0.42	0.52	A	0.051	0.060	A
75	Shahtaj Sugar Mills	3.28	0.76	C	2.37	0.54	C	1.205	0.060	C
76	Singer Pakistan Ltd.	1.38	1.38	H	1.00	0.95	C	0.101	0.380	A
77	Exide Pakistan Ltd.	1.46	1.09	C	0.63	1.00	A	0.219	0.190	C
78	KSB Pumps Company Ltd.	1.68	1.38	C	1.18	0.95	C	0.243	0.380	A
79	Ittehad Chemicals Ltd	1.05	1.24	A	0.84	1.05	A	0.118	0.260	A
80	Shakarganj Sugar Mills	0.69	0.76	C	0.48	0.54	A	0.025	0.060	A
81	Fecto Cement Ltd.	0.99	0.84	C	0.70	0.77	A	0.098	0.080	C

82	Rupali Polyester	4.72	1.24	C	2.27	1.05	C	1.136	0.260	C
83	Pakistan Cables Ltd.	1.23	1.38	A	0.54	0.95	A	0.040	0.380	A
84	Al-Abbas Sugar Mills	0.92	0.76	C	0.34	0.54	A	0.018	0.060	A
85	Habib Sugar Mills	2.58	0.76	C	1.88	0.54	C	1.037	0.060	C
86	Atlas Battery Ltd.	1.42	1.09	C	0.55	1.00	A	0.091	0.190	A
87	Shezan International Ltd.	1.85	0.79	C	0.54	0.52	C	0.182	0.060	C
88	General Tyre & Rubber Co.	1.25	1.38	A	0.61	0.95	A	0.052	0.380	A
89	Agriauto Industries Ltd.	5.77	1.38	C	3.86	0.95	C	2.077	0.380	C
90	Crescent Steel	2.45	1.38	C	1.88	0.95	C	0.047	0.380	A
91	Gadoon Textile Mills Ltd.	1.04	0.99	C	0.45	0.66	A	0.066	0.040	C
92	Fazal Textile	0.91	0.99	A	0.50	0.66	A	0.018	0.040	A
93	Murree Brewery Company	2.63	0.79	C	1.57	0.52	C	0.952	0.060	C
94	Dewan Salman Fibre	0.60	1.24	A	0.28	1.05	A	0.010	0.260	A
95	Ferozsons Laboratories Ltd.	3.04	1.24	C	1.94	1.05	C	0.227	0.260	A
96	Gul Ahmed Textile Mills	0.98	0.99	A	0.48	0.66	A	1.746	0.040	C
97	Security Papers Ltd.	4.91	1.81	C	4.11	1.35	C	0.399	0.140	C
98	Wyeth Pakistan Ltd	3.41	1.24	C	1.45	1.05	C	0.329	0.260	C
99	Fazal Cloth Mills	0.95	0.99	A	0.31	0.66	A	0.050	0.040	C
100	Gharibwal Cement Ltd.	0.71	0.84	A	0.63	0.77	A	0.106	0.080	C
101	Kohinoor Textile Mills Ltd.	1.21	0.99	C	0.86	0.66	C	0.050	0.040	C
102	Hinopak Motors Ltd.	1.35	1.38	A	0.49	0.95	A	0.061	0.380	A

103	Pak Elektron Ltd. (PEL)	1.11	1.38	A	0.66	0.95	A	0.043	0.380	A
104	Honda Atlas Cars	0.88	1.38	A	0.42	0.95	A	0.188	0.380	A
105	Cherat Cement Company	1.38	0.84	C	0.89	0.77	C	0.240	0.080	C
106	Sitara Chemical Industries	0.80	1.24	A	0.56	1.05	A	0.085	0.260	A
107	Pioneer Cement Ltd.	0.37	0.84	A	0.26	0.77	A	0.073	0.080	A
108	National Foods Ltd.	1.12	0.79	C	0.36	0.52	A	0.020	0.060	A
109	Kohat Cement Company	0.80	0.84	A	0.72	0.77	A	0.270	0.08	C
110	Pakistan Refinery Ltd.	1.15	1.09	C	0.77	1.00	A	0.084	0.190	A
111	Kohinoor Energy Ltd.	3.65	1.09	C	3.28	1.00	C	0.644	0.190	C
112	Clariant Pakistan Ltd.	1.81	1.24	C	1.18	1.05	C	0.413	0.260	C
113	Century Paper and Board	0.92	1.81	A	0.42	1.35	A	0.041	0.140	A
114	Maple Leaf Cement Factory	0.74	0.84	A	0.57	0.77	A	0.056	0.080	A
115	Mari Gas Co	1.03	1.09	A	1.01	1.00	C	0.427	0.190	C
116	Fauji Cement Company	1.25	0.84	C	1.01	0.77	C	0.389	0.08	C
117	Attock Cement Pakistan	1.70	0.84	C	1.12	0.77	C	0.250	0.08	C
118	Millat Tractors Ltd.	1.63	1.38	C	1.02	0.95	C	0.119	0.380	A
119	Atlas Honda Ltd.	1.31	1.38	A	0.81	0.95	A	0.322	0.380	A
120	Attock Refinery Ltd.	1.05	1.09	A	0.87	1.00	A	0.282	0.190	C
121	Pak Suzuki Motor Co	2.59	1.38	C	1.12	0.95	C	0.670	0.380	C
122	Philip Morris Pak Ltd.	1.99	1.20	C	0.64	0.58	C	0.250	0.110	C
123	Al-Ghazi Tractors Ltd.	2.47	1.38	C	2.02	0.95	C	1.132	0.380	C

124	Packages Ltd	2.69	1.81	C	1.80	1.35	C	0.163	0.140	C
125	Abbott Laboratories	3.13	1.24	C	1.80	1.05	C	1.118	0.260	C
126	Bestway Cement Ltd.	1.27	0.84	C	1.06	0.77	C	0.106	0.080	C
127	D.G.Khan Cement	1.83	0.84	C	1.64	0.77	C	0.023	0.080	A
128	Sui Southern Gas Co. Ltd.	0.93	1.09	A	0.91	1.00	A	0.070	0.190	A
129	Indus Motor Co. Ltd.	1.88	1.38	C	1.36	0.95	C	0.905	0.380	C
130	ICI Pakistan Ltd.	1.19	1.24	A	0.98	1.05	A	0.394	0.260	C
131	National Refinary Ltd.	1.55	1.09	C	1.05	1.00	C	0.434	0.190	C
132	Nishat Mills Ltd.	1.82	0.99	C	1.32	0.66	C	0.050	0.040	C
133	Shell Pakistan Ltd.	1.00	1.09	A	0.54	1.00	A	0.064	0.190	A
134	Azgard Nine Ltd.	0.98	0.99	A	0.67	0.66	C	0.031	0.040	A
135	Sui Northern Gas Pipelines	0.66	1.09	A	0.65	1.00	A	0.114	0.190	A
136	Colgate - Polmolive	2.07	0.79	C	0.97	0.52	C	0.570	0.060	C
137	GlaxoSmithKline	3.36	1.24	C	2.10	1.05	C	1.426	0.260	C
138	Dawood Hercules Chemicals	3.79	1.24	C	3.74	1.05	C	0.359	0.260	C
139	Rafhan Maize Products	2.09	0.79	C	0.67	0.52	C	0.163	0.060	C
140	Siemens (Pakistan) Engg	1.27	1.38	A	1.04	0.95	C	0.189	0.380	A
141	Lucky Cement Ltd.	1.37	0.84	C	0.83	0.77	C	0.260	0.080	C
142	Fauji Fertilizer Bin Qasim	0.90	1.24	A	0.76	1.05	A	0.459	0.260	C
143	Pakistan Tobacco Company	0.89	1.20	A	0.10	0.58	A	0.054	0.110	A
144	The Hub Power Company	1.46	1.09	C	1.31	1.00	C	0.329	0.190	C

145	Unilever Pakistan Ltd.	0.87	0.79	C	0.39	0.52	A	0.098	0.060	C
146	Kot Adu Power Co. Ltd.	0.99	1.09	A	1.12	1.00	C	0.151	0.190	A
147	Engro Corporation Ltd.	1.65	1.24	C	1.40	1.05	C	0.258	0.260	A
148	Pakistan State Oil	1.19	1.09	C	0.71	1.00	A	0.029	0.190	A
149	Pakistan Oilfields Ltd.	2.79	1.09	C	2.63	1.00	C	1.052	0.190	C
150	Fauji Fertilizer Company	1.05	1.24	A	0.99	1.05	A	0.157	0.260	A
151	Nestle Pakistan Ltd	0.78	0.79	A	0.36	0.52	A	0.037	0.060	A
152	Pakistan Petroleum Ltd.	2.72	1.09	C	2.67	1.00	C	0.371	0.190	C
153	Oil and Gas Dev. Corp.	3.88	1.09	C	3.68	1.00	C	0.401	0.190	C
	Aggressive policy		43.14%	66		62.09%	95		58.17%	89
	Hedging policy		1.30%	2		0	0		0	0
	Conservative policy		55.56%	85		37.91%	58		41.83%	64
	Total		100%	153		100%	153		100%	153

Working Capital Policy (Based on Sample Average and sample as a whole)

S.No	Company	C.R	S.A	Policy	ATR	S.A	Policy	CAR	S.A	Policy
1	Elahi Cotton Mills Ltd.	0.56	1.03	A	0.21	0.47	A	0.120	0.108	C
2	Mandviwala Plastic Ind	0.48	1.73	A	0.39	1.13	A	0.010	0.359	A
3	D.M. Textile Mills Ltd.	0.42	1.03	A	0.14	0.47	A	0.196	0.108	C
4	Crescent Jute Products Ltd.	0.53	0.94	A	0.26	0.61	A	0.012	0.024	A
5	Buxly Paints Ltd	1.16	1.73	A	0.81	1.13	A	0.120	0.359	A
6	Bilal Fibres Ltd.	0.64	1.03	A	0.27	0.47	A	0.032	0.108	A
7	Dewan Mushtaq Textile	0.89	1.03	A	0.51	0.47	C	0.011	0.108	A
8	Bawany Air Products Ltd.	0.28	1.73	A	0.32	1.13	A	2.275	0.359	C
9	Khyber Tobacco Company	0.65	2.26	A	0.38	1.35	A	0.031	0.189	A
10	Suhail Jute Mills Ltd.	1.36	0.94	C	0.96	0.61	C	0.035	0.024	C
11	Dewan Automotive Engg.	0.55	1.76	A	0.23	1.10	A	0.021	0.337	A
12	Gulistan Spinning Mills	0.92	1.03	A	0.26	0.47	A	0.231	0.108	C
13	Babri Cotton Mills Ltd.	0.82	1.03	A	0.14	0.47	A	0.005	0.108	A
14	Dewan Khalid Textile Mills	1.01	1.03	A	0.47	0.47	H	0.008	0.108	A
15	Pakistan PVC Ltd.	1.33	1.73	A	1.28	1.13	C	0.053	0.359	A
16	Al-Qadir Textile Mills	1.00	1.03	A	0.43	0.47	A	0.149	0.108	C
17	Ali Asghar Textiles	0.68	1.03	A	0.43	0.47	A	0.025	0.108	A
18	United Distributors Pak	1.25	1.73	A	0.64	1.13	A	0.056	0.359	A

19	Kohat Textile Mills Ltd.	0.89	1.03	A	0.33	0.47	A	0.002	0.108	A
20	Chakwal Spinning Mills	0.58	1.03	A	0.40	0.47	A	0.051	0.108	A
21	Ghazi Fabrics International	0.70	1.03	A	0.22	0.47	A	0.007	0.108	A
22	Janana De Malucho Textile	0.79	1.03	A	0.19	0.47	A	0.010	0.108	A
23	Sanghar Sugar Mills	0.62	1.33	A	0.28	0.84	A	0.021	0.276	A
24	Pakistan Paper Products	2.92	2.33	C	1.49	1.50	A	0.363	0.229	C
25	Kohinoor Sugar Mills	0.64	1.33	A	-0.08	0.84	A	0.005	0.276	A
26	Gulshan Spinning Mills	1.02	1.03	A	0.34	0.47	A	0.036	0.108	A
27	Merit Packaging Ltd.	0.98	2.33	A	0.53	1.50	A	0.297	0.229	C
28	Leiner Pak Gelatine Ltd.	1.29	1.73	A	0.52	1.13	A	0.012	0.359	A
29	Cherat Papersack Ltd.	1.58	2.33	A	0.66	1.50	A	0.109	0.229	A
30	Baba Farid Sugar Mills Ltd.	0.58	1.33	A	0.38	0.84	A	0.040	0.276	A
31	The Premier Sugar Mills	4.72	1.33	C	4.11	0.84	C	1.560	0.276	C
32	Dewan Sugar Mills	0.92	1.33	A	0.56	0.84	A	0.009	0.276	A
33	Bannu Woollen Mills Ltd.	2.34	1.03	C	0.89	0.47	C	0.016	0.108	A
34	Chashma Sugar Mills Ltd.	0.86	1.33	A	0.34	0.84	A	0.048	0.276	A
35	Dynea Pakistan Ltd.	2.04	1.73	C	1.12	1.13	A	0.136	0.359	A
36	Glamour Textile Mills	0.86	1.03	A	0.40	0.47	A	0.019	0.108	A
37	Dewan Textile Mills Ltd.	1.31	1.03	C	0.64	0.47	C	0.008	0.108	A
38	Prosperity Weaving Mills	1.17	1.03	C	0.64	0.47	C	0.057	0.108	A
39	Gulistan Textile Mills Ltd.	1.00	1.03	A	0.42	0.47	A	0.012	0.108	A

40	Descon Chemicals Ltd.	1.05	1.73	A	0.67	1.13	A	0.020	0.359	A
41	Wah Nobel Chemicals Ltd .	2.28	1.73	C	1.84	1.13	C	0.291	0.359	A
42	Bolan Castings Ltd.	2.13	1.76	C	1.31	1.10	C	0.275	0.337	A
43	Ellcot Spinning Mills Ltd.	1.25	1.03	C	0.44	0.47	A	0.091	0.108	A
44	Faran Sugar Mills	0.91	1.33	A	0.44	0.84	A	0.089	0.276	A
45	Saif Textile Mills Ltd.	0.91	1.03	A	0.39	0.47	A	0.004	0.108	A
46	Noon Sugar Mills	1.06	1.33	A	0.55	0.84	A	0.184	0.276	A
47	Sitara Energy Ltd.	0.96	1.54	A	0.80	1.27	A	1.486	0.330	C
48	Ahmed Hassan Textile	0.84	1.03	A	0.36	0.47	A	0.003	0.108	A
49	Berger Paints Pakistan Ltd	0.99	1.73	A	0.56	1.13	A	0.105	0.359	A
50	Kohinoor Weaving Mills	0.82	1.03	A	0.51	0.47	C	0.042	0.108	A
51	Mirpurkhas Sugar Mills	1.09	1.33	A	0.58	0.84	A	0.024	0.276	A
52	Otsuka Pakistan Ltd.	1.16	1.73	A	0.56	1.13	A	0.010	0.359	A
53	Japan Power Generation	0.67	1.54	A	0.59	1.27	A	0.015	0.330	A
54	Blessed Textiles	1.35	1.03	C	0.42	0.47	A	0.036	0.108	A
55	Zeal Pak Cement Factory	0.64	1.04	A	0.51	0.75	A	0.004	0.140	A
56	Nagina Cotton Mills Ltd.	2.02	1.03	C	1.08	0.47	C	0.533	0.108	C
57	Al-Noor Sugar Mills	0.83	1.33	A	0.28	0.84	A	0.050	0.276	A
58	Mehran Sugar Mills	0.88	1.33	A	0.41	0.84	A	0.031	0.276	A
59	Noon Pakistan Ltd.	0.76	1.73	A	0.51	1.13	A	0.097	0.359	A
60	Faisal Spinning	1.19	1.03	C	0.39	0.47	A	0.031	0.108	A

61	Dadex Eternit Ltd.	1.12	1.04	C	0.37	0.75	A	0.071	0.140	A
62	Southern Electric Power Co	0.38	1.54	A	0.35	1.27	A	0.010	0.330	A
63	Din Textile Mills	1.02	1.03	A	0.53	0.47	C	0.022	0.108	A
64	Bhanero Textile Mills	1.19	1.03	C	0.31	0.47	A	0.024	0.108	A
65	Clover Pakistan Ltd	2.59	1.60	C	2.03	0.78	C	0.547	0.272	C
66	Dandot Cement Ltd.	0.27	1.04	A	0.23	0.75	A	0.010	0.140	A
67	Highnoon Laboratories Ltd.	1.34	1.73	A	0.43	1.13	A	0.038	0.359	A
68	Nimir Industrial Chemicals	0.90	1.73	A	0.62	1.13	A	0.099	0.359	A
69	Dewan Farooque Motors	0.70	1.76	A	0.43	1.10	A	0.026	0.337	A
70	Pakistan Engineering Co	2.58	1.76	C	1.58	1.10	C	0.179	0.337	A
71	Haseeb Waqas Sugar Mills	0.76	1.33	A	0.38	0.84	A	0.066	0.276	A
72	Ghandhara Nissan Ltd.	1.08	1.76	A	0.42	1.10	A	0.048	0.337	A
73	Biafo Industries Ltd	2.01	1.73	C	1.53	1.13	C	0.324	0.359	A
74	Mitchell's Fruit Farms Ltd.	1.25	1.60	A	0.42	0.78	A	0.051	0.272	A
75	Shahtaj Sugar Mills	3.28	1.33	C	2.37	0.84	C	1.205	0.276	C
76	Singer Pakistan Ltd.	1.38	1.76	A	1.00	1.10	A	0.101	0.337	A
77	Exide Pakistan Ltd.	1.46	1.54	A	0.63	1.27	A	0.219	0.330	A
78	KSB Pumps Company Ltd.	1.68	1.76	A	1.18	1.10	C	0.243	0.337	A
79	Ittehad Chemicals Ltd	1.05	1.73	A	0.84	1.13	A	0.118	0.359	A
80	Shakarganj Sugar Mills	0.69	1.33	A	0.48	0.84	A	0.025	0.276	A
81	Fecto Cement Ltd.	0.99	1.04	A	0.70	0.75	A	0.098	0.140	A

82	Rupali Polyester	4.72	1.73	C	2.27	1.13	C	1.136	0.359	C
83	Pakistan Cables Ltd.	1.23	1.76	A	0.54	1.10	A	0.040	0.337	A
84	Al-Abbas Sugar Mills	0.92	1.33	A	0.34	0.84	A	0.018	0.276	A
85	Habib Sugar Mills	2.58	1.33	C	1.88	0.84	C	1.037	0.276	C
86	Atlas Battery Ltd.	1.42	1.54	A	0.55	1.27	A	0.091	0.330	A
87	Shezan International Ltd.	1.85	1.60	C	0.54	0.78	A	0.182	0.272	A
88	General Tyre & Rubber Co.	1.25	1.76	A	0.61	1.10	A	0.052	0.337	A
89	Agriauto Industries Ltd.	5.77	1.76	C	3.86	1.10	C	2.077	0.337	C
90	Crescent Steel	2.45	1.76	C	1.88	1.10	C	0.047	0.337	A
91	Gadoon Textile Mills Ltd.	1.04	1.03	C	0.45	0.47	A	0.066	0.108	A
92	Fazal Textile	0.91	1.03	A	0.50	0.47	C	0.018	0.108	A
93	Murree Brewery Company	2.63	1.60	C	1.57	0.78	C	0.952	0.272	C
94	Dewan Salman Fibre	0.60	1.73	A	0.28	1.13	A	0.010	0.359	A
95	Ferozsons Laboratories Ltd.	3.04	1.73	C	1.94	1.13	C	0.227	0.359	A
96	Gul Ahmed Textile Mills	0.98	1.03	A	0.48	0.47	C	1.746	0.108	C
97	Security Papers Ltd.	4.91	2.33	C	4.11	1.50	C	0.399	0.229	C
98	Wyeth Pakistan Ltd	3.41	1.73	C	1.45	1.13	C	0.329	0.359	A
99	Fazal Cloth Mills	0.95	1.03	A	0.31	0.47	A	0.050	0.108	A
100	Gharibwal Cement Ltd.	0.71	1.04	A	0.63	0.75	A	0.106	0.140	A
101	Kohinoor Textile Mills Ltd.	1.21	1.03	C	0.86	0.47	C	0.050	0.108	A
102	Hinopak Motors Ltd.	1.35	1.76	A	0.49	1.10	A	0.061	0.337	A

103	Pak Elektron Ltd. (PEL)	1.11	1.76	A	0.66	1.10	A	0.043	0.337	A
104	Honda Atlas Cars	0.88	1.54	A	0.42	1.27	A	0.188	0.330	A
105	Cherat Cement Company	1.38	1.04	C	0.89	0.75	C	0.240	0.140	C
106	Sitara Chemical Industries	0.80	1.73	A	0.56	1.13	A	0.085	0.359	A
107	Pioneer Cement Ltd.	0.37	1.04	A	0.26	0.75	A	0.073	0.140	A
108	National Foods Ltd.	1.12	1.60	A	0.36	0.78	A	0.020	0.272	A
109	Kohat Cement Company	0.96	1.04	A	0.72	0.75	A	0.270	0.140	C
110	Pakistan Refinery Ltd.	1.15	1.54	A	0.77	1.27	A	0.084	0.330	A
111	Kohinoor Energy Ltd.	3.65	1.54	C	3.28	1.27	C	0.644	0.330	C
112	Clariant Pakistan Ltd.	1.81	1.73	C	1.18	1.13	C	0.413	0.359	C
113	Century Paper and Board	0.92	2.33	A	0.42	1.50	A	0.041	0.229	A
114	Maple Leaf Cement Factory	0.74	1.04	A	0.57	0.75	A	0.056	0.140	A
115	Mari Gas Co	1.03	1.54	A	1.01	1.27	A	0.427	0.330	C
116	Fauji Cement Company	1.25	1.04	C	1.01	0.75	C	0.389	0.140	C
117	Attock Cement Pakistan	1.70	1.04	C	1.12	0.75	C	0.250	0.140	C
118	Millat Tractors Ltd.	1.63	1.76	A	1.02	1.10	A	0.119	0.337	A
119	Atlas Honda Ltd.	1.31	1.76	A	0.81	1.10	A	0.322	0.337	A
120	Attock Refinary Ltd.	1.05	1.54	A	0.87	1.27	A	0.282	0.330	A
121	Pak Suzuki Motor Co	2.59	1.76	C	1.12	1.10	C	0.670	0.337	C
122	Philip Morris Pak Ltd.	1.99	2.26	A	0.64	1.35	A	0.250	0.189	C
123	Al-Ghazi Tractors Ltd.	2.47	1.76	C	2.02	1.10	C	1.132	0.337	C

124	Packages Ltd	2.69	2.33	C	1.80	1.50	C	0.163	0.229	A
125	Abbott Laboratories	3.13	1.73	C	1.80	1.13	C	1.118	0.359	C
126	Bestway Cement Ltd.	1.27	1.04	C	1.06	0.75	C	0.106	0.140	A
127	D.G.Khan Cement	1.83	1.04	C	1.64	0.75	C	0.023	0.140	A
128	Sui Southern Gas Co. Ltd.	0.93	1.54	A	0.91	1.27	A	0.070	0.330	A
129	Indus Motor Co. Ltd.	1.88	1.76	C	1.36	1.10	C	0.905	0.337	C
130	ICI Pakistan Ltd.	1.46	1.73	A	0.98	1.13	A	0.394	0.359	C
131	National Refinary Ltd.	1.55	1.54	C	1.05	1.27	A	0.434	0.330	C
132	Nishat Mills Ltd.	1.82	1.03	C	1.32	0.47	C	0.050	0.108	A
133	Shell Pakistan Ltd.	1.00	1.54	A	0.54	1.27	A	0.064	0.330	A
134	Azgard Nine Ltd.	0.98	1.03	A	0.67	0.47	C	0.031	0.108	A
135	Sui Northern Gas Pipelines	0.66	1.54	A	0.65	1.27	A	0.114	0.330	A
136	Colgate - Polmolive	2.07	1.60	C	0.97	0.78	C	0.570	0.272	C
137	GlaxoSmithKline	3.36	1.73	C	2.10	1.13	C	1.426	0.359	C
138	Dawood Hercules Chemicals	3.79	1.73	C	3.74	1.13	C	0.359	0.359	H
139	Rafhan Maize Products	2.09	1.60	C	0.67	0.78	A	0.163	0.272	A
140	Siemens (Pakistan) Engg	1.27	1.76	A	1.04	1.10	A	0.189	0.337	A
141	Lucky Cement Ltd.	1.37	1.04	C	0.83	0.75	C	0.260	0.140	C
142	Fauji Fertilizer Bin Qasim	0.90	1.73	A	0.76	1.13	A	0.459	0.359	C
143	Pakistan Tobacco Company	0.89	2.26	A	0.10	1.35	A	0.054	0.189	A
144	The Hub Power Company	1.46	1.54	A	1.31	1.27	C	0.329	0.330	A

145	Unilever Pakistan Ltd.	0.87	1.60	A	0.39	0.78	A	0.098	0.272	A
146	Kot Adu Power Co. Ltd.	1.27	1.54	A	1.12	1.27	A	0.151	0.330	A
147	Engro Corporation Ltd.	1.65	1.73	A	1.40	1.13	C	0.258	0.359	A
148	Pakistan State Oil	1.19	1.54	A	0.71	1.27	A	0.029	0.330	A
149	Pakistan Oilfields Ltd.	2.79	1.54	C	2.63	1.27	C	1.052	0.330	C
150	Fauji Fertilizer Company	1.05	1.73	A	0.99	1.13	A	0.157	0.359	A
151	Nestle Pakistan Ltd	0.78	1.60	A	0.36	0.78	A	0.037	0.272	A
152	Pakistan Petroleum Ltd.	2.72	1.54	C	2.67	1.27	C	0.371	0.330	C
153	Oil and Gas Dev. Corp.	3.88	1.54	C	3.68	1.27	C	0.401	0.330	C
	Aggressive policy		66%	101		66.%	101		73%	112
	Hedging policy		0	0		1%	1		1%	1
	Conservative policy		34%	52		33%	51		26%	40
	Total		100%	153		100%	153		100%	153

Determination of Working Capital Policy on the Basis of LTI and LTF

S.No.	Name of company (All amounts are Rs. In millions)	CA	PCA (Lowest CA figure)	LTI	LTF	LTF-LTI	WCP	Dummies
1	Al-Qadir Textile	212	130	556	387	-168	Aggressive	1
2	Ali Asghar Textiles	240	38	680	532	-148	Aggressive	1
3	Ahmed Hassan Tex.	827	431	1,855	2,093	238	Conservative	2
4	Azgard Nine Ltd.	11,791	3,277	19,002	17,104	-1,898	Aggressive	1
5	Gulshan Spinning	2,342	1,135	2,480	1,321	-1,159	Aggressive	1
6	Babri Cotton Mills	339	187	1,074	625	-449	Aggressive	1
7	Bannu Woollen Mills	351	199	743	630	-112	Aggressive	1
8	Bilal Fibres Ltd.	239	142	840	470	-370	Aggressive	1
9	Bhanero Textile Mills	1,480	634	2,227	1,851	-377	Aggressive	1
10	Chakwal Spinning	410	256	1,017	446	-570	Aggressive	1
11	Blessed Textiles	1,005	501	1,983	1,694	-289	Aggressive	1
12	D.M. Textile Mills	153	36	833	635	-199	Aggressive	1
13	Din Textile Mills	1,995	927	2,656	1,857	-799	Aggressive	1
14	Dewan Khalid Textile	719	575	927	396	-531	Aggressive	1
15	Dewan Mushtaq Tex.	663	389	713	269	-444	Aggressive	1
16	Dewan Textile Mills	2,855	2,420	3,757	1,772	-1,985	Aggressive	1
17	Ghazi Fabrics	907	396	1,933	1,107	-826	Aggressive	1
18	Gul Ahmed Textile	8,135	5,351	10,874	4,991	-5,883	Aggressive	1
19	Gadoon Textile Mills	4,100	1,645	5,151	3,822	-1,329	Aggressive	1
20	Gulistan Spinning	1,352	537	1,444	1,306	-138	Aggressive	1
21	Gulistan Textile Mills	4,604	1,707	4,079	1,824	-2,256	Aggressive	1
22	Janana De Malucho	560	263	1,879	1,147	-732	Aggressive	1
23	Elahi Cotton Mills	8	3	55	8	-46	Aggressive	1
24	Kohat Textile Mills	534	380	1,100	590	-510	Aggressive	1
25	Ellcot Spinning Mills	815	428	1,334	1,069	-265	Aggressive	1
26	Kohinoor Weaving	3,100	2,243	6,220	2,747	-3,473	Aggressive	1
27	Prosperity Weaving	615	425	1,361	1,023	-338	Aggressive	1
28	Kohinoor Textile	6,143	3,892	9,495	7,197	-2,299	Aggressive	1
29	Faisal Spinning	1,427	685	2,232	1,988	-243	Aggressive	1
30	Nagina Cotton Mills	920	583	1,399	1,249	-150	Aggressive	1
31	Nishat Mills Ltd.	18,534	8,295	19,863	30,928	11,065	Conservative	2
32	Fazal Cloth Mills	3,710	392	6,608	7,012	404	Conservative	2
33	Saif Textile Mills	1,955	975	3,150	2,042	-1,108	Aggressive	1
34	Fazal Textile	1,436	784	2,422	1,663	-759	Aggressive	1
35	Glamour Textile	280	104	677	507	-170	Aggressive	1
36	Al-Abbas Sugar Mills	1,810	659	2,233	1,520	-713	Aggressive	1
37	Al-Noor Sugar Mills	1,821	601	2,701	1,824	-878	Aggressive	1
38	Haseeb Waqas Sugar	857	277	1,754	870	-883	Aggressive	1
39	Shahtaj Sugar Mills	706	315	663	845	181	Conservative	2
40	Baba Farid Sugar	506	120	1,041	603	-437	Aggressive	1

41	Chashma Sugar Mills	1,394	293	2,484	1,988	-496	Aggressive	1
42	Dewan Sugar Mills	2,682	1,922	5,306	2,315	-2,991	Aggressive	1
43	Faran Sugar Mills	928	328	968	740	-228	Aggressive	1
44	Habib Sugar Mills	2,192	1,123	1,869	2,358	488	Conservative	2
45	Kohinoor Sugar Mills	483	228	1,593	1,256	-337	Aggressive	1
46	Mehran Sugar Mills	885	344	1,073	820	-253	Aggressive	1
47	Mirpurkhas Sugar	841	501	1,144	781	-363	Aggressive	1
48	Noon Sugar Mills	706	247	1,338	1,020	-318	Aggressive	1
49	Sanghar Sugar Mills	528	19	620	393	-227	Aggressive	1
50	Shakarganj Sugar	3,995	657	5,838	2,920	-2,917	Aggressive	1
51	The Premier Sugar	967	668	1,563	1,563	0	Hedging	0
52	Buxly Paints Ltd	101	75	84	22	-62	Aggressive	1
53	Bawany Air Products	21	14	191	2,333	2,142	Conservative	2
54	Mandviwala Mauser	111	87	221	20	-202	Aggressive	1
55	Biafo Industries Ltd	166	33	295	390	94	Conservative	2
56	Descon Chemicals	636	109	457	414	-43	Aggressive	1
57	Rupali Polyester	1,941	1,559	2,537	2,357	-180	Aggressive	1
58	Ittehad Chemicals Ltd	1,155	798	3,016	2,093	-923	Aggressive	1
59	Leiner Pak Gelatine	184	156	327	171	-155	Aggressive	1
60	Nimir Industrial	556	316	1,409	974	-435	Aggressive	1
61	Dewan Salman Fibre	7,818	3,641	13,521	2,628	-10,893	Aggressive	1
62	Sitara Chemical	2,255	1,179	5,730	5,397	-333	Aggressive	1
63	Wah Nobel	372	256	370	334	-35	Aggressive	1
64	Ferozsons Lab.	720	215	1,028	1,299	271	Conservative	2
65	Highnoon Lab.	704	451	1,100	807	-293	Aggressive	1
66	Berger Paints	1,718	611	1,233	593	-640	Aggressive	1
67	Clariant Pakistan Ltd.	3,883	2,395	3,248	2,696	-552	Aggressive	1
68	Dynea Pakistan Ltd.	516	348	502	411	-91	Aggressive	1
69	Dawood Hercules	11,277	201	1,073	18,577	17,504	Conservative	2
70	Engro Corporation	19,371	2,734	62,857	68,031	5,174	Conservative	2
71	Fauji Fertilizer	22,798	1,625	19,529	24,252	4,723	Conservative	2
72	Fauji Fertilizer	18,000	7,488	22,350	14,534	-7,816	Aggressive	1
73	ICI Pakistan Ltd.	9,886	8,347	16,883	12,310	-4,573	Aggressive	1
74	Pakistan PVC Ltd.	156	6	198	198	0	Hedging	0
75	United Distributors	341	173	220	158	-63	Aggressive	1
76	Abbott Laboratories	4,197	2,396	4,158	4,543	385	Conservative	2
77	GlaxoSmithKline	8,499	5,432	8,687	9,474	787	Conservative	2
78	Otsuka Pakistan	462	55	347	376	30	Conservative	2
79	Wyeth Pakistan	1,383	935	1,109	1,151	42	Conservative	2
80	Attock Refinary	34,886	8,830	13,883	11,004	-2,879	Aggressive	1
81	Atlas Battery Ltd.	858	282	858	810	-48	Aggressive	1
82	Japan Power	1,819	386	5,919	4,376	-1,543	Aggressive	1
83	Kot Adu Power	38,966	5,914	23,910	27,068	3,159	Conservative	2
84	Mari Gas Co	8,067	3,327	7,016	8,909	1,894	Conservative	2
85	OGDCL	106,458	56,210	94,341	173,961	79,620	Conservative	2
86	PSO	147,419	34,670	41,485	32,612	-8,873	Aggressive	1
87	Pakistan Petroleum	49,123	20,517	49,270	72,486	23,216	Conservative	2
88	Pakistan Refinery	18,685	5,537	7,837	2,115	-5,722	Aggressive	1
89	Sitara Energy Ltd.	991	691	2,271	1,665	-606	Aggressive	1

90	Southern Electric	2,235	720	7,635	3,926	-3,709	Aggressive	1
91	Sui Northern Gas	39,451	19,989	84,626	47,533	-37,093	Aggressive	1
92	Sui Southern Gas	57,989	14,340	53,521	35,603	-17,919	Aggressive	1
93	The Hub Power	50,144	10,191	46,760	47,088	327	Conservative	2
94	Exide Pakistan Ltd.	1,596	453	1,120	1,030	-90	Aggressive	1
95	Kohinoor Energy	3,173	1,862	6,313	6,585	272	Conservative	2
96	National Refinary	37,404	15,301	17,943	14,949	-2,995	Aggressive	1
97	Pakistan Oilfields	15,006	7,885	13,671	28,565	14,894	Conservative	2
98	Shell Pakistan Ltd.	24,617	9,945	16,141	7,836	-8,305	Aggressive	1
99	Agriauto Industries	1,339	490	768	1,489	722	Conservative	2
100	Bolan Castings Ltd.	599	246	458	458	0	Hedging	0
101	Crescent Steel	2,280	1,758	2,006	2,912	905	Conservative	2
102	Dewan Automotive	477	89	494	-352	-846	Aggressive	1
103	Millat Tractors Ltd.	7,070	3,325	3,725	3,481	-244	Aggressive	1
104	Dewan Farooque	3,345	2,335	4,210	363	-3,847	Aggressive	1
105	Pak Elektron Ltd.	8,347	3,149	12,075	8,339	-3,737	Aggressive	1
106	Singer Pakistan Ltd.	1,597	763	1,105	710	-395	Aggressive	1
107	Atlas Honda Ltd.	5,069	2,705	5,889	4,389	-1,500	Aggressive	1
108	Al-Ghazi Tractors	5,268	2,067	2,339	3,234	895	Conservative	2
109	General Tyre	2,591	1,432	2,964	1,805	-1,159	Aggressive	1
110	Ghandhara Nissan	1,342	592	1,739	1,204	-536	Aggressive	1
111	Honda Atlas Cars	5,939	2,807	5,995	2,780	-3,216	Aggressive	1
112	Hinopak Motors Ltd.	3,621	2,333	3,466	1,747	-1,719	Aggressive	1
113	Indus Motor Co. Ltd.	16,865	9,714	12,443	10,485	-1,958	Aggressive	1
114	KSB Pumps	1,231	602	806	675	-131	Aggressive	1
115	Pak Suzuki Motor Co	15,432	11,232	15,085	12,932	-2,153	Aggressive	1
116	Pakistan Cables Ltd.	1,456	560	1,575	1,158	-417	Aggressive	1
117	Pakistan Engineering	830	481	4,162	2,461	-1,702	Aggressive	1
118	Siemens (Pakistan)	15,077	4,422	5,712	5,272	-439	Aggressive	1
119	Clover Pakistan Ltd	584	243	298	422	124	Conservative	2
120	National Foods Ltd.	1,370	382	979	818	-161	Aggressive	1
121	Noon Pakistan Ltd.	391	116	571	332	-239	Aggressive	1
122	Mitchell's Fruit Farms	350	220	518	365	-153	Aggressive	1
123	Shezan International	1,078	517	858	822	-36	Aggressive	1
124	Colgate - Polmolive	2,652	94	1,652	3,147	1,494	Conservative	2
125	Nestle Pakistan Ltd	9,220	2,435	17,268	12,955	-4,314	Aggressive	1
126	Rafhan Maize	3,167	1,575	3,870	9,718	5,848	Conservative	2
127	Unilever Pakistan	6,698	4,024	8,111	3,493	-4,618	Aggressive	1
128	Murree Brewery	1,281	601	2,800	2,309	-491	Aggressive	1
129	Zeal Pak Cement	849	562	2,472	452	-2,020	Aggressive	1
130	Bestway Cement Ltd.	5,971	2,788	16,902	18,450	1,548	Conservative	2
131	Cherat Cement	1,402	930	3,504	3,039	-465	Aggressive	1
132	Dandot Cement	515	221	2,367	456	-1,911	Aggressive	1
133	D.G.Khan Cement	17,331	4,294	26,441	32,305	5,863	Conservative	2
134	Fecto Cement Ltd.	952	519	1,900	1,417	-483	Aggressive	1
135	Fauji Cement	2,939	1,181	12,424	14,904	2,480	Conservative	2
136	Gharibwal Cement	1,909	426	7,345	4,927	-2,417	Aggressive	1
137	Kohat Cement	1,548	518	5,414	4,723	-690	Aggressive	1
138	Lucky Cement	6,839	1,345	24,876	24,924	47	Conservative	2

139	Maple Leaf Cement	4,455	1,535	20,219	15,227	-4,992	Aggressive	1
140	Pioneer Cement Ltd.	1,303	506	8,263	4,884	-3,379	Aggressive	1
141	Dadex Eternit Ltd.	1,100	915	1,457	492	-965	Aggressive	1
142	Attock Cement	2,101	741	4,901	5,110	208	Conservative	2
143	Cherat Papersack	1,001	349	772	1,066	294	Conservative	2
144	Century Paper	2,608	674	7,873	7,256	-617	Aggressive	1
145	Merit Packaging	347	77	588	444	-145	Aggressive	1
146	Security Papers	1,747	507	1,992	2,991	999	Conservative	2
147	Pakistan Paper	147	64	285	285	0	Hedging	0
148	Packages Ltd	9,199	4,063	16,440	28,338	11,898	Conservative	2
149	Khyber Tobacco	55	1	23	23	0	Hedging	0
150	Pakistan Tobacco	5,774	3,460	8,568	4,485	-4,083	Aggressive	1
151	Philip Morris Pak	6,233	3,485	6,926	5,613	-1,313	Aggressive	1
152	Suhail Jute Mills	299	79	622	577	-44	Aggressive	1
153	Crescent Jute	262	49	441	32	-409	Aggressive	1

Location-Wise Correlations among Dependent, Independent and Control Variables

A. Domestic Firms

	RoA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
RoA	1									
MBR	.100**	1								
CR	.349**	.054	1							
ATR	.331**	.094**	.915**	1						
CAR	.102**	-.001	.328**	.317**	1					
MC	.177**	.305**	.152**	.210**	.007	1				
DDM	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}			
CCC	.092**	.017	.195**	.077**	.010	.041	.^{b}	1		
CGI	.030	.076*	.022	.053	-.043	.011	.^{b}	-.041	1	
SG	.096**	.007	-.007	.003	-.006	.012	.^{b}	-.073*	.002	1

B. Multinational Firms

	RoA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
RoA	1									
MBR	.227**	1								
CR	.204**	-.203**	1							
ATR	.189**	-.167**	.895**	1						
CAR	.341**	-.101*	.534**	.509**	1					
MC	.326**	.595**	-.101*	-.009	.016	1				
DDM	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}	.^{b}			
CCC	.025	.005	.208**	.049	.018	-.092	.^{b}	1		
CGI	.003	.205**	.079	.068	.085	.109*	.^{b}	.018	1	
SG	-.054	-.047	-.096	-.089	-.048	-.053	.^{b}	.021	-.041	1

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

b. Cannot be computed because at least one of the variables is constant.

Size-Wise Correlations among Dependent, Independent and Control Variables

A. Small Firms

	RoA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
RoA	1									
MBR	-.031	1								
CR	.144**	.009	1							
ATR	.082	.032	.914**	1						
CAR	.059	.002	.233**	.282**	1					
MC	.119*	.176**	.223**	.152**	-.006	1				
DDM	.066	.004	.233**	.183**	-.001	-.030	1			
CCC	.058	.059	.212**	.059	-.004	.169**	0.282**	1		
CGI	-.049	.121**	.054	.058	-.034	-.006	0.058	-.023	1	
SG	.069	-.002	-.024	.010	-.005	-.044	0.010	-.128**	0.016	1

B. Medium Firms

	RoA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
RoA	1									
MBR	.073	1								
CR	.474**	.004	1							
ATR	.425**	.021	.912**	1						
CAR	.148**	-.031	.404**	.378**	1					
MC	.181**	.232**	.137**	.121**	.060	1				
DDM	.008	.045	.062	-.016	-.028	.045	1			
CCC	.178**	-.027	.205**	.101*	.039	.061	.105**	1		
CGI	.100*	.077	.036	.030	-.032	-.006	-.045	.013	1	
SG	.079	.036	-.024	-.037	-.007	-.010	.098*	.048	0.016	1

C.   Large Firms

	RoA	MBR	CR	ATR	CAR	MC	DDM	CCC	CGI	SG
RoA	1									
MBR	.167**	1								
CR	.303**	-.121**	1							
ATR	.268**	-.135**	.918**	1						
CAR	.284**	-.091	.506**	.442**	1					
MC	.207**	.250**	.175**	.224**	-.018	1				
DDM	.256**	.228**	.234**	.092*	.310**	-.103*	1			
CCC	.056	.045	.226**	.096*	-.008	.100*	-.012	1		
CGI	-.213**	.036	-.081	-.037	-.062	-.028	-.242**	-.051	1	
SG	.025	-.048	-.049	-.044	-.040	.016	-.044	-.019	-0.053	1

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